

ALAMEDA NAVAL AIR STATION

ALAMEDA, CALIFORNIA

Engineering Field Division/Activity: EFAWEST
Major Claimant: CINCPACFLT
Size: 2,634 Acres
Funding to Date: \$38,138,000
Estimated Funding to Complete: \$103,028,000

Base Mission: Maintains and operates facilities and provides services and material support operations for Naval aviation activities and operating forces

Contaminants: Acetone, chlorinated solvents, cyanide, benzene, ethylbenzene, heavy metals, pesticides/herbicides, methylene chloride, POLs, PCBs, semivolatile solvents, toluene, volatile organic solvents, xylene

Number of Sites:		Relative Risk Ranking of Sites:	
CERCLA:	23	High:	14
RCRA Corrective Action:	0	Medium:	9
RCRA UST:	7	Low:	6
Total Sites:	30	Total Sites:	30

BRAC III



EXECUTIVE SUMMARY

Alameda Naval Air Station (NAS) is located on Alameda Island, which lies at the western end of the city of Alameda in Alameda County, California. Prominent site types include landfills, off-shore areas, plating shops, abandoned fuel storage, a former oil refinery, pest control area and transformer storage area. The Navy has changed its operational processes to prevent further contamination. A Federal Facilities Site Remediation Agreement (FFSRA) was initiated in FY93 with the State of California. Alameda NAS was listed for closure by the 1993 Base Realignment and Closure (BRAC) commission. Closure is scheduled for September 1997. An Environmental Baseline Survey (EBS) has been completed. The BRAC Cleanup Team (BCT) was initiated in FY93. A BRAC Cleanup Plan (BCP) was completed in FY94.

There are no naturally occurring surface streams or ponds on Alameda NAS. Surface water either infiltrates to the groundwater or runs off into storm drains that discharge to San Francisco Bay. Many of these storm drains are at sea level. Presently no groundwater is used for water supply on Alameda Island or in Oakland, but Alameda NAS has been examining groundwater for potability.

Information Repositories are located at the Main Alameda Public Library and at the Alameda NAS Library. A Technical Review Committee (TRC) was formed in FY90 and converted to a Restoration Advisory Board (RAB) in FY93. The RAB has 25 members who meet monthly. Focus groups also meet to discuss RAB charter interests.

At the end of FY95, all of the sites at Alameda NAS were in the study phase. Remedial Investigation/Feasibility Studies (RI/FS) were initiated in FY89. A Record of Decision (ROD) will be signed for the four Operable Units (groups of sites) at Alameda NAS in FY98 and Remedial Design will start in FY99.

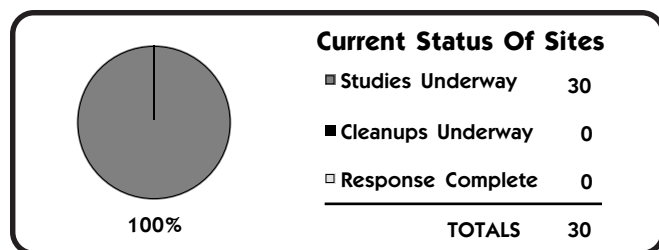
In FY93, an Interim Remedial Action (IRA) at Site 13 removed lead and acid contaminated soils and another IRA removed free floating hydrocarbons. Soil removals have been performed at two other sites to eliminate fuel and lead contaminated soils. To reduce immediate hazards caused by methane gas buildup at Site 2 (West Beach Landfill), a fence was constructed around the landfill perimeter and the methane gas was vented. Soil excavation was completed at Site 15 to delineate the extent of the chemical additive PCB and lead present in the surface soils. With public concurrence, the Navy selected ex-situ treatment by soil washing. Studies for potential early treatability of sediments at the Seaplane Lagoon are being conducted along with studies to determine bio-availability and the lateral and vertical extent of contamination.

Sixty abandoned tanks and surrounding soil were excavated and removed in FY95 from an Underground Storage Tank (UST) site. Plans for removing 44,000 feet of abandoned fuel lines were completed in FY95 at another UST site and preliminary soil and groundwater sampling has been done to facilitate cleanup.

Alameda NAS is one of the few installations using a Geographical Information System (GIS) to manage data and to support on-site decision making. Use of innovative technologies and active partnering will accelerate cleanup and decrease cost. In FY95, Alameda NAS secured a contract with the University of California, Berkeley, for innovative technology as applied to treatability studies.

An innovative field screening technology known as the Site Characterization and Analysis Penetrometer System (SCAPS) was used at Site 13 in FY94. The Navy used SCAPS to investigate the lateral and vertical extent of petroleum crude waste by-products at the old refinery site. Because field data was reviewed immediately, the cleanup decision-making process was expedited.

Presumptive remedies selected for the landfills at Sites 1 and 2 are capping, containment, monitoring and maintenance. Remedies may also include groundwater and leachate extraction and treatment, in-situ biological curtain and innovative biotechnology applications, such as "funnel and gate." Screening and pilot-scale treatability studies at Sites 4 and 5 involve in-situ bivalence to treat hexavalent chromium in soil beneath the plating shops. A treatability study at Site 13 is using enhanced steam stripping technologies which may work to mobilize hydrocarbon liquids and vapors from soil for capture and treatment.



ALAMEDA NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Alameda NAS is located on Alameda Island, which lies at the western end of the city of Alameda in Alameda County, California. Alameda Island lies along the eastern side of the San Francisco Bay and is separated from the city of Oakland by the Oakland Inner Harbor. To the west and south of Alameda NAS is the San Francisco Bay. There are no naturally occurring surface streams or ponds on Alameda NAS. Surface water either infiltrates to the groundwater or runs off into storm drains that discharge to San Francisco Bay. Many of these storm drains are at sea level. Presently no groundwater is used for water supply on Alameda Island or in Oakland, but Alameda NAS has been examining groundwater for potability.



NATURAL RESOURCES - The endangered California Least Tern breeds and nests on Alameda Island. This is the largest colony of Least Terns in Northern California. In 1984, there were 47 nesting pairs, now there are 128 nesting pairs. This was due to an active management plan that removed the predators. This breakwater island is one of the only night roost areas for California Brown Pelicans in the San Francisco Bay. Many other species of birds nest here and the island is frequented by migratory birds such as Canadian Geese and Western Gulls. Elephant Harbor Seals and other marine animals also use this breakwater island.



RISK - An Ecological Assessment Plan was completed in FY93. A survey was conducted as part of the Ecological Assessment to identify and delineate two wetland areas and to determine potential impacts on the wetlands from Installation Restoration Program (IRP) sites. Phase I of the Ecological Assessment is now completed. Two wetland areas and potentially impacted offshore areas will raise ecological risk above human health risk as the major risk driver. A draft Human Health Risk report has been completed. Human health and drinking water are presently under evaluation.

Under the DOD Relative Risk Ranking System, 12 CERCLA sites and two UST sites at Alameda NAS received a high relative risk ranking. Sites 4 and 22 and USTs 3 and 8 all have contaminants that include petroleum products and volatile organic compounds affecting groundwater. However, the groundwater may be delisted as having no beneficial use. Sites 17 (Seaplane Lagoon) and Site 20 (Oakland Inner Harbor) have contaminants that include semi-volatile organic compounds, the chemical additive PCB, pesticides and metals affecting sediment. Contaminated sediment may impact humans via the ingestion of contaminated shellfish and fish.

The remaining seven high risk sites include a landfill, abandoned fuel storage, former oil refinery, plating shop, pest control area and transformer storage area. Soils in these areas were found to be contaminated with the chemical additive PCB, semi-volatile compounds, pesticides, metals and petroleum products. Human receptors may include current and future on-site workers through inhalation and dermal contact. Two of these sites, Site 2 (West Beach Landfill) and Site 3 (Abandoned Fuel Storage Area) have contaminants that affect soil and sediments. Receptors for these areas also include ecological receptors (flora and fauna) and numerous threatened bird species. Alameda NAS has presented its risk assessment approach to regulators who are reviewing the approach at this time.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Alameda NAS is still under consideration for placement on the NPL.



LEGAL AGREEMENTS - A Federal Facilities Site Remediation Agreement (FFSRA) was initiated in FY93 with the State of California. The FFSRA will contain a Site Management Plan (SMP) for scheduling of cleanup activities.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in FY90 and met quarterly. The TRC was converted to a Restoration Advisory Board (RAB) in FY93. Some of the original TRC members are in the RAB. The first formal RAB meeting was held in April 1994. The RAB has 25 members from Alameda NAS, the community, the Sierra Club, school district, a public health official and the Alameda Reuse and Redevelopment Authority (ARRA). The RAB meets monthly. Focus groups also meet to discuss charter interests. The RAB is developing a charter to identify and resolve issues and ensure that all stakeholders have ample opportunity to participate in the decision-making process. The RAB has educated the community on cleanup processes and has had presentations on the CERCLA process, early actions, treatability studies and a session on geology. Some RAB members have also participated in RAB workshops.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in FY89 and identified the efforts that would be taken to keep the community informed on the base cleanup issues. This plan is in the process of being updated, with expected completion during FY96.



INFORMATION REPOSITORY - An Administrative Record was established in FY89. Information Repositories are located at the Main Alameda Public Library and at the Alameda NAS Library. A copy of the Administrative Record documents are contained in the local Information Repositories.

BASE REALIGNMENT AND CLOSURE



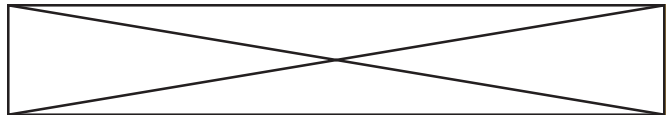
BRAC - Alameda NAS was placed on the Base Realignment and Closure (BRAC) list in September 1993. Operational closure is scheduled for September 1997.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was initiated in FY93 and is committed to the use of innovative technologies and treatability studies. This will accelerate cleanup and reduce future remedial action expenditures.



DOCUMENTS - An EBS identified 214 parcels. Parcels will be recategorized in early FY96. Release of parcels and accelerated cleanup actions are a high priority. A BCP was completed in FY94. The Phase I EBS (Community Environmental Response Facilitation Act of 1992 (CERFA) Determination) designated six parcels as Category 1. The Phase II EBS investigated the remaining 208 parcels. Designations are expected to readjust at least 30% of the Category 7 parcels to Categories 2 and 3.



REUSE - The Alameda NAS reuse plan is being coordinated through the following organizations: Alameda Reuse and Redevelopment Authority (ARRA), Alameda Base Reuse Advisory Group (BRAG), the East Bay Conversion and Reinvestment Commission (EBCRC) and the RAB. The City of Alameda has also established a Base Closure Department which supports the ARRA, coordinates with the Navy, the BRAG, as well as other commissions and agencies that have reuse jurisdiction in areas such as air and water quality, transportation planning, seaport and shoreline. The City of Alameda has an Interim Reuse Plan, covering the 10-15 years following base closure. The Long Term reuse Plan is to be final in the spring of 1996. The initial plan will lease structures where similar current functions can be maintained.



FAST TRACK INITIATIVES - Early removal actions will be used to eliminate hot spots and sources to expedite property transfer. Innovative technologies will accelerate cleanup and decrease cost. Active partnering with agencies in conjunction with

ALAMEDA NAS

responsible decision making will accelerate Findings of Suitability to Lease (FOSL), IRP and decrease cost.

Priority planning and streamlined contracting procedures lead to improved team work between the Navy and other agencies. All buildings at the installation were evaluated for asbestos to determine the need for further action or emergency cleanup.

Issues needing regulatory review include approaches for identifying background and ambient conditions, approaches to risk assessments and criteria for reviewing EBS material and FOSLs and for integrating new sites into the IRP. Alameda NAS has learned to make the most of its limited funds to continue cleanup programs. Base closure adds a further dimension in that it requires regulators and the Navy, to evaluate programs not only in terms of protectiveness, but also in terms of the community's reuse plan. Only with adequate funding and staffing will regulatory agencies be able to meet this new challenge creatively and meaningfully.

HISTORICAL

FY83

Sites 1-12 - An Initial Assessment Study (IAS) was completed and identified 12 potentially contaminated sites. Sites 8-12 (currently known as Sites 20, 21, 22, 13 and 14) were found not to pose a threat to human health or the environment. Sites 1-7 (currently known as Sites 2, 1, 17, 3, 15, 16 and 4) were recommended for further investigation because of their potential effect on human health and the food chain, in particular the endangered California Least Tern.

FY85

Sites 1-4 and 15-17 - A Confirmation Study (CS) was completed and found heavy metals and organic compounds in soils and groundwater. Resampling was recommended to confirm the groundwater results. Sites 1-4 were recommended for further investigation. Sites 15-17 were recommended for No Further Action (NFA).

FY87

Sites 1-4 and 5-20 - The EPA Region IX and the California Department of Toxic Substances Control required that these sites be studied in the RI.

FY88

The RI/FS was initiated with the development of RI/FS work plans.

Sites 1 and 2 - The California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, required that a Solid Waste Assessment Test (SWAT) be conducted at these two sites to determine if hazardous waste was migrating from the landfill into San Francisco Bay.

FY93

Initiated Field Sampling and Data Summary report. Initiated Ecological Assessment.

Sites 1 and 2 - The Draft Final Solid Waste Water Quality Assessment Test Report (Phases 5 and 6) was completed. The report concluded that volatile and semi-volatile organic compounds appear to have migrated from these sites to off-site groundwater.

FY94

Completed Phase I of Environmental Baseline Survey.

Site 13 - An IRA to remove lead and acid contaminated soils was completed. The IRA was required by the Department of Toxic Substances and Control (DTSC) and the RWQCB San Francisco. Another IRA to remove free floating petroleum hydrocarbons (pumped out of this site) was completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

Basewide - Plans and specifications for removing 44,000 ft of abandoned fuel lines is complete and preliminary soil and groundwater sampling has been done to facilitate cleanup.

All Sites - Phase I of the Ecological Assessment is completed. Human Health Risk draft report was completed. RI documents for most of the sites have been completed. The Long Term Monitoring (LTM) plan is almost complete. A Data Summary document was completed.

Sites 1-20 - The Final RI Report is underway.

Site 7 - Removal of four USTs and contaminated soil around tanks was completed.

Site 15 - Removal of the chemical additive PCB and lead contaminated

soils is underway. The soils have been excavated and the site backfilled with clean soil. Soil washing of the excavated soils will occur in FY96.

Site 5 - A treatability study is underway. Samples are being taken and bench scale testing is being performed for a site demonstration by Lockheed called electrokinetic remediation, to remove metals and other ionic compounds near the old plating shop. Studies for potential early treatability of sediments at the Sea Plane Lagoon are being conducted. Minor characterization has been recommended to determine bioavailability and the lateral and vertical extent of contamination.

Site 16 - Began Engineering Evaluation/Cost Analysis (EE/CA) for removal of petroleum, the chemical additive PCB and lead contaminated soil.

Site 18 - Removed debris from catch basins.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

All Sites - Phase II of the Ecological Assessment will be completed.

Site 5 - The pilot scale demonstration by Lockheed of electrokinetics will be completed.

Sites 16 and 18 - Removal action implementation is planned.

Sites 2, 3, 13 and 17 - Treatability studies are underway through UC Berkeley. These studies will evaluate the feasibility of using innovative technologies including steam enhanced extraction and examine Intrinsic Bioremediation of contaminated sediment.

Steam enhanced extraction has been evaluated (bench-scale) at Site 13.

Site 15 - Removal of lead contaminated soils will be complete, using an Innovative Technology for soil washing.

FY97

Twenty sites will have a final RI Report in FY97.

Sites 7 and 22 - An EE/CA for the removal of petroleum contaminated soils should be completed.

Site 14 - An EE/CA for removal of petroleum products should be completed.

Site 16 - An EE/CA for removal of the chemical additive PCB and lead should be completed.

Site 18 - An EE/CA for removal of soils and debris from catch basins should be completed. In the past, waste was frequently dumped into storm sewers.

Sites 1-20 - The Final RI Report will be completed.

Sites 2, 3, 13 and 17 - Treatability studies will be complete. Potential follow on treatability studies with UC Berkeley will look at enhanced bioremediation for Sites 2, 3 and 13.

ALAMEDA NAS PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	10							
SI	7							
RI/FS					18	3	2	
RD						17	4	2
RA						1	16	6
IRA			1(1)	2(2)	4(4)	1(1)		
RC						1	13	9
Cumulative Response Complete						4%	61%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC		1						
INV			5	1	1			
CAP				5	1	1		
DES					5	2		
IMP								7
IRA							1(1)	6(6)
RC								7
Cumulative Response Complete								100%

AZUSA NAVAL COMMAND CONTROL AND OCEAN SURVEILLANCE CENTER, MORRIS DAM FACILITY AZUSA, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV
 Major Claimant: COMSPAWARSSCOM
 Size: 20 Acres
 Funding to Date: \$50,000
 Estimated Funding to Complete: \$7,367,000
 Base Mission: Tests and evaluates torpedoes and torpedo components
 Contaminants: Paint, ordnance compounds, PCBs, POLs



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	2	High:	1	Not Evaluated:
RCRA Corrective Action:	0	Medium:	0	Response Complete:
RCRA UST:	0	Low:	0	Total Sites:
Total Sites:	2			2

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	2							
SI	1				1			
RI/FS								
RD						1		
RA						1		
IRA	1(1)							
RC	1							1
Cumulative Response Complete	50%							100%

BARSTOW MARINE CORPS LOGISTICS BASE

BARSTOW, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 5,688 Acres

Funding to Date: \$56,610,000

Estimated Funding to Complete: \$75,880,000

Base Mission: Originally conducted industrial operations; currently maintains, repairs, rebuilds, stores and distributes supplies and equipment

Contaminants: Heavy metals, PCBs, POLs, pesticides/herbicides, volatile organic compounds, dichloroethane, ethylene dibromide, tetra-chloroethylene, trichloroethylene

Number of Sites:

CERCLA: 39
RCRA Corrective Action: 0
RCRA UST: 2
Total Sites: 41

Relative Risk Ranking of Sites:

High: 10
Medium: 4
Low: 26
Not Evaluated: 1
Response Complete: 0
Total Sites: 41

NPL



EXECUTIVE SUMMARY

Marine Corps Logistics Base (MCLB) Barstow is located directly east of the City of Barstow, in the central Mojave Desert, about halfway between Los Angeles and Las Vegas. MCLB Barstow consists of three separate, distinct areas: the Nebo and Yermo Annexes and the Rifle Range. The Nebo Annex houses most of the Base's administrative activities: Base housing, military and dependent support facilities, and covered storage for warehousing activities. The Yermo Annex is utilized mainly for industrial maintenance, repair and rebuild activities. The Rifle Range provides a secured area where Marines can practice and improve their marksmanship skills. Typical operations that contributed to contaminated sites on the facility include: vehicle maintenance, weapons repair and maintenance, missile systems maintenance and repair, communications, electronics repair, machine shop, petroleum products and chemical storage and an Industrial Wastewater Treatment Plant (IWTP). Current operations include pollution prevention technologies to prevent further contamination. MCLB Barstow was listed on the National Priorities List (NPL) in November 1989 due to the detection of the organic solvent TCE in groundwater monitoring wells. MCLB Barstow signed a Federal Facility Agreement (FFA) with EPA and California regulatory agencies in October 1990.

The Nebo, Rifle Range and Yermo areas of MCLB Barstow are all fairly well isolated from neighboring communities which are located 1/4 to 1 mile from facility boundaries. Commercial land development adjacent to the facility includes sand and gravel mining/processing. Also, the City of Barstow maintains a sewage treatment plant and effluent disposal ponds adjacent to the property. Other surrounding land is generally unused and undeveloped desert land. Results from field efforts has shown the groundwater contamination at both Yermo and Nebo to be the major environmental concern.

A Technical Review Committee (TRC) was established in FY91 and meets on a regular basis. A Community Relations Plan (CRP) was completed and an Information Repository established in 1991.

Currently, 41 sites are in a study phase, of which 39 sites are CERCLA sites. All 39 CERCLA sites are in the Remedial Investigation/Feasibility Study (RI/FS) phase. Five removal actions have been completed. One Interim Remedial Action (IRA) is underway. The remaining two Underground Storage Tank (UST) sites are in the Investigation (INV) phase.

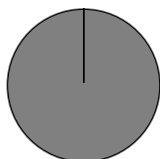
Granulated Activated Carbon (GAC) Units have been installed on Base production wells to treat the organic solvents TCE and PCE found in the groundwater. At Nebo, the organic solvent TCE contamination found in an off base well resulted in a removal action to provide base water to three affected families. At Yermo, it is also clear that the organic solvents TCE and PCE well above Maximum Contaminant Levels (MCLs) are migrating off base and must be remediated, and recently a removal action was performed installing carbon filtration for two affected off-base families.

In the future, at the CERCLA sites, all RI/FSs are expected be complete by the end of FY98. Corrective Action (CA) will be completed at one UST site in FY97 and the other in FY98.

As the Installation Restoration Program (IRP) moves from study to cleanup, decisions affecting land use are now being made. Large portions of land will be tied up during construction of the infiltration galleries for the Yermo groundwater treatment. Landfills covering several acres of land will get capped, affecting long term use of the land. Some areas of land are going to institutional controls, limiting the land use. Because of this, the involvement from the activity is becoming more critical.

A success story during FY95, was the reduction in Phase II field effort for Operable Units (OUs) 5 and 6 from \$12 million to \$4 million. This was accomplished by negotiating a lesser scope (which still met Data Quality Objectives (DQOs)) with the regulatory agencies.

Current Status Of Sites



100%

■ **Studies Underway** 41

■ **Cleanups Underway** 0

□ **Response Complete** 0

TOTALS 41

BARSTOW MCLB RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Groundwater is the only source of water for both domestic and industrial use in the area. Four documented historical contaminant sources have contributed to the degradation of groundwater quality in the vicinity of Barstow. They are effluent disposal from the city of Barstow Wastewater Treatment Plant (WWTP), irrigation water from the MCLB golf course at Nebo, waste discharged from the AT&SF rail yard at Barstow, and chlorinated solvents from the Nebo Main Base. The Mojave River recharges regional groundwater. However, groundwater conditions at the Yermo Annex are significantly different from the conditions at the Nebo Main Base. At the Yermo Annex, groundwater is encountered from between 133 and 147 feet below ground surface (bgs). At the Nebo Main Base, groundwater is encountered much shallower, between approximately 10 and 75 feet bgs in the central area of the Base and up to 175 feet bgs on the alluvial fan south of Interstate 40. In the bed of the Mojave River, groundwater has been encountered at a depth of only 4 to 5 feet bgs. The groundwater table has remained relatively stable at Nebo Main Base, but has been lowered about 70 feet at the Yermo Annex since the 1930's. The lowering of the water table can be attributed to regional groundwater withdrawal due primarily to agricultural irrigation wells with minor influences coming from private and public production wells. Currently, there are two active Yermo Annex production wells which are located within the Yermo contaminant plume. Both of these wells have carbon filtration systems to remove Volatile Organic Compounds (VOCs) to non-detectable levels. This water is currently used for various domestic and industrial uses at the Yermo Annex. The remaining production wells at the Yermo Annex are currently inactive. Production wells at Nebo Main Base have been inactive since about 1975.

The dry bed of the Mojave River is the dominant surface water feature in the Mojave Desert. A surface water drainage control system was built for the Nebo Main Base soon after the base was established. Assembly of storm drains, culverts, and paved areas distribute runoff to a main drainage canal at Nebo Main Base. This canal directs the water generally south to west and ultimately northeast across the Main Base to the Mojave River. Surface water discharge is less controlled and typically less of a problem at the Yermo Annex; however, in April 1993 the Mojave River flooded over its banks, deluging the southern portion of the Annex and destroying two monitoring wells.



NATURAL RESOURCES - Due to extensive land clearing, paving, and construction, native flora and fauna have been disturbed at Nebo and Yermo. Non-native species have been planted in some areas in both the Nebo Main Base and the Yermo Annex. Outside the boundaries of the Base, relatively unaltered natural habitats still exist. The Creosote Bush Scrub, Alkali Sink and Semi-dune vegetation communities surrounding the Yermo Annex and Nebo Main Base provide diverse habitats for many species of native and non-native wildlife. The principal native vertebrates in the area are rodents, reptiles and birds. Introduced species include pocket gophers, starlings, flickers, song sparrows, meadowlarks, and ravens. One endangered species and two threatened species have been identified on or near MCLB Barstow. The Mojave Tui Chub is endangered and the Mojave Ground Squirrel and the Desert Tortoise are both threatened species.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted as part of the Remedial Investigations (RIs). Ten sites were ranked as high relative risk in the Department of Defense (DOD) Relative Risk Ranking System. The high ranking was due to contaminated groundwater for eight of the sites and contaminated soil for three of the sites.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - MCLB Barstow was included on the National Priorities List (NPL) on 21 November 1989 based on a Hazard Ranking System (HRS) score of 37.93. The listing was due to the detection of the organic solvent in groundwater monitoring wells located at the Nebo facility.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) between the Department of the Navy (DON), the EPA Region IX, the California Department of Health Services and the California Regional Water Quality Control Board (CRWQCB), Lahontan Region, was signed in October 1990. The agreement established schedules and regulatory review turnaround times for key project milestones.

Thirty-eight sites were divided into six Operable Units (OUs) in the FFA. OU 1 (Site 37) and OU 2 (Site 38) address groundwater contamination at the Yermo and Nebo Annexes, respectively. OU 3 (Sites 18, 20, 21, 23 and 34); OU 4 (Sites 2, 5, 9 and 11); OU 5 (Sites 15-17, 19, 22, 24-32, 35 and 36); and OU 6 (Sites 1, 3, 4, 6-8, 10, 12-14, and 33) address contaminated soil at 36 sites that were identified in previous Installation Restoration Program (IRP) investigations. An additional OU, OU 7, will be added to address any sites identified in the RCRA Facility Assessment (RFA).



PARTNERING - A week long team building session was held in FY93. Regulatory agencies which attended were EPA Region IX, Cal-EPA and the CRWQCB, Lahontan Region.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established yet for this base. Marine Corps base will establish a RAB if the public indicates an interest in establishing one. However, a Technical Review Committee (TRC) was formed in November 1990.



COMMUNITY RELATIONS PLAN - Community Relations Plan (CRP) was completed in 1991. Fact sheets are produced on a quarterly basis. A public meeting is held at least once a year. Turnout is usually low due to lack of public interest.



INFORMATION REPOSITORY - An Information Repository and an Administrative Record were established in 1991.

BARSTOW MCLB HISTORICAL PROGRESS

FY83

Sites 1-33 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in September 1983, identified 33 potentially contaminated sites at MCLB Barstow. Sites 1-14 are located at the Nebo Annex, Sites 15-32 are located at the Yermo Annex and Site 33 is located at the Rifle Range which is contiguous with Nebo.

FY86

Sites 2, 5, 9, 11, 18, 19, 21, 23, 34 and 35 - A Confirmation Study (CS), equivalent to an Site Inspection (SI), completed in February 1986, addressed Sites 2, 5, 9, 11, 18, 19, 21, 23 and two additional sites located at the Yermo Annex (Sites 34 and 35). The study found pesticides and herbicides in soil and the organic solvent TCE in groundwater at Site 2; petroleum hydrocarbons and the pesticide DDT in soil at Site 11; petroleum hydrocarbons and heavy metals (arsenic, barium, beryllium, lead, and vanadium) in soil and petroleum hydrocarbons, the organic solvents dichloroethane and ethylene dibromide in groundwater at the Sludge Waste Disposal Area (Site 18); and heavy metals (arsenic, lead, and vanadium) in soil and petroleum hydrocarbons in groundwater at the Industrial Waste Disposal Area (Site 21); the chemical additive PCB in sludge at Site 34; and no evidence of heavy metals contamination in soil at Site 35. (Metal-contaminated sandblast grit had been suspected at Site 35, a Class III Landfill.) The report found no or insignificant levels of contamination at the Chemical Storage Area (Site 5); the Fuel Disposal Area (Site 9); the First Hazardous and Low Level Radiological Storage Area (Site 19); and the Landfill Area (Site 23).

FY89

Site 37 - An Action Memorandum (equivalent to an Interim Record of Decision (IROD)) was completed in July 1989 for installation of an activated carbon groundwater treatment system to remove volatile organic contaminants from the Yermo drinking water system. The system will continue through FY97 and has been effective in removing volatile organic compounds (VOCs) to below detection limits.

FY90

Sites 37 and 38 - In partial response to a Cleanup and Abatement Order issued in July 1989, a study was conducted in February 1990 to determine whether contamination from on-site operations had adversely impacted drinking water supplies in the vicinity of Yermo Annex and Nebo Annexes. The results of the study indicated that although trace amounts of volatile

organic compounds were detected in two of 17 off-site wells, the detected concentrations did not pose a human health risk and were well below federal and state drinking water standards. The off-site wells are scheduled for continued monitoring during the Remedial Investigation (RI).

Site 38 - An SI was completed.

FY91

Site 36 - Another new site, the Proposed Vehicle Maintenance Shop, was identified in 1991. Although no SI was done at this site, petroleum products were found in the soil and the site was recommended for a Remedial Investigation/Feasibility Study (RI/FS).

RCRA Sites - A Preliminary Review/Visual Site Inspection (PR/VSI) Report was completed in August.

FY92

UST 01 - Forty-one Underground Storage Tanks (USTs) were removed in June 1992.

FY93

Sites 18 and 29 - A removal action involving the removal of industrial waste sludge was completed in FY93 at the Sludge Waste Disposal Area (Site 18) and at the Sludge Storage Area (Site 29).

Sites 37 and 38 - An Interim Remedial Action (IRA) was completed in June 1993 at OU 2 (Site 38) that provided water to three families using water from an off-base well contaminated with the organic solvent TCE. Efforts are underway to improve the water supply at Operable Unit (OU) OU 2 and to provide a water supply to residents affected by OU 1 (Site 37). An alternative water supply is expected to be provided through FY20. A treatability study at Site 37 using a Pilot Extraction Well and Air-Sparging system was performed in FY93 to determine the appropriate removal required to control off-base migration of contaminated groundwater.

Site 35 - The percolation ponds continue to be aerated and a filter was installed in FY93 to remove the organic solvent tetrachloroethylene from water before discharge to the ponds. This is expected to continue until FY98, if sampling indicates tetrachloroethylene concentrations above the state action level.

FY94

Site 34 - A removal action to remove soil contaminated with the chemical additive PCB was conducted.

Site 2 - A removal action to remove contaminated soil was completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

OU 7 - A RCRA Facility Assessment (RFA) at MCLB Barstow was initiated and is expected to be completed by EPA Region IX in August 1996. It is planned that sites identified during the RFA as needing further action will be investigated under CERCLA as OU 7 in an RI/FS.

Sites 1-38 - RI/FSs were underway.

OU 1 (Site 37) - An Extraction Well and Air-Sparging system is being

implemented at OU 1 and will operate until FY20. A time critical/emergency removal action was conducted to provide carbon filtration of wells for private residents off Yermo Annex.

UST 2 - An Investigation (INV) was completed. UST 2 consists of approximately 70 additional tank locations that the California Regional Water Quality Control Board (CRWQCB), Lahontan Region, is requiring to be removed and tested. Ground Penetrating Radar confirmed the existence of only seven tanks which will be removed in FY96.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

OUs 1-4 (Sites 2, 5, 9, 11, 18, 20, 21, 23, 34, 37 and 38) - RI/FSs will be completed at 11 sites. Records of Decision (RODs) will be completed.

Sites 39-99 - An RFA is underway at 61 sites and scheduled to be completed in FY96. Those sites requiring further action will be studied in an RI/FS under the CERCLA program.

FY97

Sites 1, 3, 4, 6-8, 10, 12-17, 19, 22, 24-33, 35 and 36 - RI/FSs will be

completed at 26 sites. RODs will be completed.

Sites 2, 19 and 20 - Remedial Design (RD) will be completed.

UST 2 - Corrective Action (CA) will be completed (removal of seven tanks).

Sites 5, 9, 11, 18, 21, 23, 34, 37 and 38 - RD will be initiated at 9 sites and completed in FY98.

Sites 2 and 20 - Remedial Actions (RAs) will be initiated and completed in FY98.

UST 1 - A CA will be initiated and completed in FY98.

BARSTOW MCLB PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	33		1					
SI	11							
RI/FS			11	26	1			
RD				3	9	25	1	
RA				1	2	10	26	
IRA	5(5)			1(1)	1(1)			2(2)
RC				1	1	6	23	8
Cumulative Response Complete				3%	5%	21%	79%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1							
INV			1	1				
CAP								
DES								
IMP				1	1			
IRA	1(1)							
RC								2
Cumulative Response Complete								100%

BRIDGEPORT MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER

BRIDGEPORT, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 45,215 Acres

Funding to Date: \$6,256,000

Estimated Funding to Complete: \$8,471,000

Base Mission: Provides training and limited logistics support to deploying Marine Corps forces; develops, tests, and evaluates equipment for cold weather and mountain operations

Contaminants: POLs, methyl ethyl ketone, naphthalene, benzene, toluene, ethylbenzene, xylene



Number of Sites:

CERCLA: 10
RCRA Corrective Action: 1
RCRA UST: 6
Total Sites: 17

Relative Risk Ranking of Sites:

High: 6 Not Evaluated: 1
Medium: 6 Response Complete: 1
Low: 3 Total Sites: 17

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	10							
SI	1		9					
RI/FS								4
RD								4
RA								4
IRA	2(2)				1(1)			3(6)
RC	1		4					5
Cumulative Response Complete	10%		50%					100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA			1					
RFI								
CMS								
DES								
CMI								
IRA			1(1)					
RC			1					
Cumulative Response Complete			100%					
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	6							
INV	3							3
CAP			2	1				
DES								
IMP								
IRA	2(2)			1(1)				2(3)
RC			1	2				3
Cumulative Response Complete			17%	50%				100%

CAMP PENDLETON MARINE CORPS BASE

OCEANSIDE, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 125,000 Acres

Funding to Date: \$63,395,000

Estimated Funding to Complete: \$136,618,000

Base Mission: Provides housing, training facilities, logistical support and administrative support to Fleet Marine Force Units

Contaminants: Heavy metals, pesticides, PCBs, benzene, chlorobenzene, dichloroethane, ethylbenzene, methyl ethyl ketone, tetrachlorobenzene, trichloroethane, trichloroethylene, xylene

Number of Sites:

CERCLA: 60
RCRA Corrective Action: 81
RCRA UST: 30
Total Sites: 171

Relative Risk Ranking of Sites:

High: 42
Medium: 4
Low: 82
Not Evaluated: 36
Response Complete: 7
Total Sites: 171

NPL



EXECUTIVE SUMMARY

The Camp Pendleton Marine Corps Base (MCB) is bordered by the City of San Clemente to the north, the City of Oceanside to the south and the City of Fallbrook to the east. The base has served as a training base since its establishment in 1941. Industrial and other support operations which have contributed to contaminated sites on the facility have generated hazardous wastes, including waste oils, contaminated fuels and other petroleum products, cleaning solvents and pesticide rinseate. Current operations include pollution prevention technologies to prevent further contamination. Camp Pendleton was included on the National Priorities List (NPL) in November 1989. The potential for contamination of potable groundwater was the primary reason for placement on the NPL. A Federal Facilities Agreement (FFA) was signed with EPA and California regulatory agencies in October 1990.

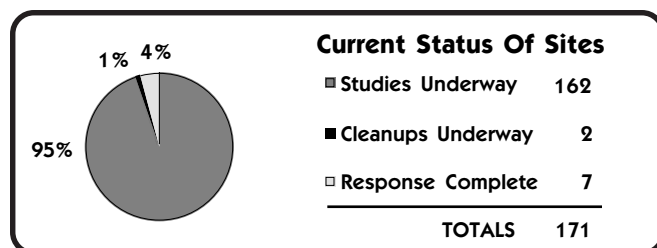
Adjacent lands are residential, rural and agricultural. A majority of the surrounding land is undeveloped. The Pacific ocean is due west of the base. Hydrogeology at MCB Camp Pendleton is conducive to contaminant migration. Base personnel obtain drinking water from wells located on the base. The nearest well is within 1,320 feet of one of the disposal areas. Precipitation runs off to several nearby creeks and rivers. These creeks and rivers are used for recreational activities and some empty into coastal wetlands. There are also a number of endangered, threatened or rare species on the base. The MCB is located on a site which has significant archaeological and historical value. Three sites located on the base are included in the National Register of Historic Places. One of these sites has also been designated a National Historical Landmark.

The base has an active Technical Review Committee (TRC) with enthusiastic participation by the local community. A Community Relations Plan (CRP) and Information Repositories were established in FY92.

Out of 171 sites at the MCB, 162 sites are in the study phase. This includes 81 RCRA sites, 30 UST Sites and 60 CERCLA sites. The Remedial Investigation/Feasibility Study (RI/FS) phase was completed at six CERCLA sites in FY95 and is underway for 47 sites. Remedial Design (RD) has been completed for one site and is underway at three sites. Remedial Action (RA) is underway at two sites. Study is underway for 30 UST sites.

Initial Site Characterizations and Investigations will be completed for 16 UST sites in FY97. RI/FSs will be completed at seven CERCLA sites in FY97.

The base has been successful in utilizing the state "one voice" leadership to resolve difficult Applicable or Relevant and Appropriate Requirement (ARAR) issues related to the Fish & Games and the Air Pollution Control District (APCD) regulations with regard to cleanup of Site 5. Additionally, in FY95, the first Record of Decision (ROD) was signed for OU1, a no action ROD.



CAMP PENDLETON MCB RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Groundwater is shallow, averaging 7-14 feet deep and soils are permeable, conditions that facilitate movement of contaminants into groundwater. The base is wholly dependent on groundwater to meet all on-base water demands, including potable supply. The nearest well is within 1,320 feet of one of the disposal areas. Surface runoff drains to several creeks and rivers which eventually discharge to the Pacific Ocean. The San Margarita River, Las Flores Creek and San Mateo Creek empty into coastal wetlands within two miles of Camp Pendleton. Surface waters within three miles downstream are used for recreational activities.



NATURAL RESOURCES - Within base boundaries are two natural wetland habitats which are protected by state and county agencies. These two critical habitats, vernal pools and coastal marshes, once common in Southern California, have decreased due to extensive development.

A number of species (plants, reptiles, birds and mammals) observed on base have been listed as endangered, threatened or rare. Most of the rare, threatened and endangered species found on the base are located within marshlands situated at the mouths of the Santa Margarita River, Las Flores Creek and San Mateo Creek. In addition, the coastal beaches are also suited for these species. The Santa Margarita River is a major nesting habitat for two endangered avian species, the California Least Tern which nests in the marshland and Least Bell's Vireo which nests in the willow thickets adjacent to the Chappo Area.



RISK - The DOD Relative Risk Ranking was applied to 135 sites at MCB. Forty-two sites were ranked as high relative risk. These sites were ranked as high primarily due to known soil and groundwater contamination. Because of the NPL listing, the Agency for Toxic Substance and Disease Registry (ATSDR) is conducting a Public Health Assessment at Camp Pendleton. A Site Visit by ATSDR was completed in FY91.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - In 1980, two water supply wells near Site 3 were found contaminated with the Herbicide 2,4,5-TP(SILVEX). MCB Camp Pendleton obtains its entire domestic and agricultural water supply from groundwater basins within its boundaries and this potential for groundwater contamination was the primary reason for placement on the NPL. MCB Camp Pendleton was included on the NPL on 21 November 1989 based on a Hazard Ranking System score of 33.79.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) was signed by Department of the Navy, EPA Region IX, the California Department of Toxic Substances Control and the California Regional Water Quality Control Board, San Diego Region, in October 1990. The agreement established lead and support agency roles, work schedules and regulatory review turnaround times for key project milestones. In FY93, all parties to the FFA met for a two week period to evaluate more than 1,000 RFA sites to determine whether the sites should be dropped from further investigations or promoted into an investigation process.

The sites in the cleanup program have been organized into four groups (Groups A-D) for sites that will proceed to Phase II RI and two OUs for sites that will not proceed to Phase II RI.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established yet for this base. Marine Corps base will establish a RAB if the public indicates an interest in establishing one. A Technical Review Committee (TRC) was formed in November 1991. The base has an active TRC attended by the base communities, local agencies and other interested members of the public. The TRC has been meeting regularly at the base and attending public representatives have been enthusiastically participating in discussions involved with finding solutions to issues related to site remediations. A non-hostile community surrounds MCB Camp Pendleton.



COMMUNITY RELATIONS PLAN - A Community Relations Plan was completed in February 1992. Several Fact Sheets have been released and distributed.



INFORMATION REPOSITORY - An Information Repository and an Administrative Record were established in November 1991. The information from the Administrative Record is contained in the information repository.

CAMP PENDLETON MCB HISTORICAL PROGRESS

FY84

Sites 1-8 - An Initial Assessment Study (IAS), equivalent to a PA, identified eight potentially contaminated sites. Site 1 consists of nine refuse burning grounds (Sites 1000-1008) and Site 2 consists of six mess hall grease disposal pits (Sites 2000-2005) scattered throughout the base.

FY88

Sites 3-5, 8 and 9 - A Site Inspection (SI) was completed in FY88. (Site 9 was added during the SI at the request of the Department of the Navy to meet the requirements of the California Toxic Pits Control Act.)

FY90

Site 4 - In response to a California Regional Water Quality Control Board, San Diego Region letter (dated August 14, 1989), sampling and analysis were conducted in July 1990 at a concrete-lined surface impoundment in the vicinity of the MCAS Drainage Ditch. Results indicated the presence of petroleum hydrocarbons in sludge and acetone in liquid, in the impoundment. Site 4 was expanded to include the concrete-lined surface impoundment.

Sites 19 and 21 - On March 23, 1990 and on June 19, 1990, the California Regional Water Quality Control Board, San Diego Region, listed the 31 Area LCAC-5 Two Surface Impoundments (Site 19) and the 14 Area

Unlined Surface Impoundment (Site 21), respectively, as toxic pits and required the Department of the Navy to "cease discharge" and to prepare Work Plans for removal of liquid and sludge in compliance with the Toxic Pits Control Act. The Work Plans were submitted in August 1990 for regulatory agency review and approval.

FY91

RCRA Sites - A RCRA Facility Assessment (RFA) was completed in July 1991.

Sites 8, 20-26 - Additional investigation during FFA negotiations, involving review of existing reports and interviews with base personnel, identified seven additional CERCLA sites (Sites 20-26) and expanded Site 8 to include Las Flores Creek.

FY93

Sites 49-157 - A RCRA Facility Investigation (RFI) was completed in June 1993 for 109 sites (Sites 49-157). Twenty-eight sites were later deleted from the program due to lack of contamination.

FY94

Site 5 - A Remedial Design (RD) was completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 3-6, 9 and 24 - An RI/FSs was completed.

Sites 7, 8, 10, 14, 16-20, 22, 27-48, 1000-1008 and 2000-2005 - RI/FSs were ongoing.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 3, 6, 7, 29, 30, 1003 and 1004 - An Engineering Evaluation/Cost Analysis (EE/CAs) and Action Memorandums will be completed.

Site 5 - A removal action to remove contaminated soil will be completed at the Fire Fighter Drill Field.

Site 19 - A removal action will be completed to remove liquids, sludges and liners from impoundments at this site in accordance with a California Regional Water Quality Control Board, San Diego Region, Cease Discharge Order.

FY97

Sites 7, 8, 14, 19, 20 and 22 - RI/FS will be completed.

Sites 29, 32 and 38 - An EE/CA will be complete.

USTs 11-14, 20-27, 43, 52, 53, 62 and 100 - Initial Site Characterization (ISC) and Investigation will be complete.

CAMP PENDLETON MCB PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	45							
SI	23							
RI/FS		6		7	4	6	11	22
RD	1		3	3	5	4	22	
RA			1	3	5	3	3	29
IRA	8(8)		3(5)		4(4)	3(3)	3(3)	2(2)
RC	4	3			2	5	5	41
Cumulative Response Complete	7%	12%			15%	23%	32%	100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	81							
RFI	81							
CMS						81		
DES								
CMI							81	
IRA								
RC							10	71
Cumulative Response Complete							12%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC				16	13			
INV				16	13			
CAP					16	13		1
DES						16	13	
IMP							16	14
IRA								1(2)
RC							1	29
Cumulative Response Complete							3%	100%

CENTERVILLE BEACH NAVAL FACILITY

CENTERVILLE BEACH, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVFACENGCOM

Size: 25 Acres

Funding to Date: \$269,000

Estimated Funding to Complete: \$13,880,000

Base Mission: Commissioned in 1958 for oceanographic research

Contaminants: Solvents, POLs, heavy metals, PCBs



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	7	High:	0	Not Evaluated:
RCRA Corrective Action:	0	Medium:	1	Response Complete:
RCRA UST:	3	Low:	4	Total Sites:
Total Sites:	10			10

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	5							
SI		3	3					
RI/FS					1	2		4
RD						2	1	2
RA							2	3
IRA				4(4)	1(1)			
RC							2	5
Cumulative Response Complete							29%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	3							
INV								
CAP		3						
DES				3				
IMP						3		
IRA	1(1)					1(1)		
RC								3
Cumulative Response Complete								100%

CHINA LAKE NAVAL AIR WEAPONS STATION

CHINA LAKE, CALIFORNIA

Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVAIRSYSCOM
Size: 608,190 Acres
Funding to Date: \$28,451,000
Estimated Funding to Complete: \$145,865,000



Base Mission: Navy research, development test and evaluation center for air warfare systems and missile weapon systems; national range facility for parachute test and evaluation

Contaminants: Acid, asbestos, heavy metals, POLs, paint, PCBs, industrial sludge and wastewater, pesticides, plating waste, unexploded ordnance, solvents, explosive chemicals

Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	79	High:	22	Not Evaluated:
RCRA Corrective Action:	0	Medium:	3	Response Complete:
RCRA UST:	9	Low:	6	Total Sites:
Total Sites:	88			88

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	49	15	14					
SI	21	5	8	8				
RI/FS				3	4	4	7	6
RD					1	1	4	13
RA							1	18
IRA			12(12)	1(1)	1(1)			
RC	29		20	8	2		2	18
Cumulative Response Complete	37%		62%	72%	75%		77%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	6	2						
INV					1			
CAP	5		1	1		1		
DES	1		2			1		
IMP				7			1	
IRA			1(1)	2(2)				
RC				3		1	1	4
Cumulative Response Complete				33%		44%	56%	100%

CHOCOLATE MOUNTAIN AERIAL GUNNERY RANGE

NILAND, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 460,000 Acres

Funding to Date: \$126,000

Estimated Funding to Complete: \$4,269,000

Base Mission: Provides MCAS Yuma with a large and diversified assortment of ground targets for live-fire aerial gunnery, air-to-ground bombing and strafing training by Marine Corps and Navy pilots. The SEAL Camp is used for desert training and readiness operations

Contaminants: Paint, POLs, solvents, acid, ash

Number of Sites:

CERCLA: 7

RCRA Corrective Action: 0

RCRA UST: 0

Total Sites: 7

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 6

Medium: 0 Response Complete: 1

Low: 0 Total Sites: 7



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	7							
SI				4				2
RI/FS							1	2
RD								3
RA								3
IRA	1(1)	1(1)			3(6)			
RC	1							6
Cumulative Response Complete	14%							100%

CONCORD NAVAL WEAPONS STATION

CONCORD, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVSEASYSOM

Size: 13,023 Acres

Funding to Date: \$39,033,000

Estimated Funding to Complete: \$69,821,000

Base Mission: Ships, receives, inspects, and classifies munitions (tidal area); serves as munitions storage and weapons maintenance, inspection and testing facility (inland area)

Contaminants: Heavy metals, POLs, volatile and semi-volatile organic compounds



Number of Sites:

CERCLA: 30
RCRA Corrective Action: 24
RCRA UST: 3
Total Sites: 57

Relative Risk Ranking of Sites:

High: 29
Medium: 4
Low: 1
Not Evaluated: 10
Response Complete: 13
Total Sites: 57

NPL

EXECUTIVE SUMMARY

Concord Naval Weapons Station (NWS) is about 35 miles northeast of San Francisco, California. It is surrounded by the city of Concord to the west and south (population 116,000); the city of Bay Point to the east (population 17,000) and the small town of Clyde (population 600) to the north. It is the major Naval munitions facility on the west coast and, as an ocean terminal facility, is used to transship ordnance from trucks and railcars to ships and vice versa. The base operations include shipping, receiving, inspecting, storing and maintaining munitions. Past operational practices such as improper disposal of paints and solvents, spent ordnance, treated wood, household/industrial waste, the open burning of various munitions and spills or leaks from fuel storage tanks have contributed to sources of contamination.

The environmental investigations at Concord are divided into three geographical areas; Inland, Tidal and Litigation. The Litigation Area, located in a tidal area, was purchased by the Navy in the 1970's to provide a buffer zone around the munitions handling operations. The Litigation Area is so named because of the legal actions conducted by the Navy in the late 1980's to recover Remedial Action (RA) cleanup costs from the adjacent and former property owners. Twenty-nine sites in the Tidal and Litigation Areas were ranked as high relative risk primarily because of heavy metals contamination.

The Tidal and Litigation Areas include wetlands that provide habitat for several endangered and threatened species, including the Salt Marsh Harvest Mouse and the California Clapper Rail. The sites in these areas are subject to tidal inundation, have no containment measures and have a direct interconnection to Suisun Bay. Suisun Bay lies immediately to the north of NWS and is commonly used for water sports and fishing.

Concord NWS was placed on the National Priorities List (NPL) primarily because of surface water pathway conditions at the Tidal and Litigation Areas. As a result of its recent listing on the NPL, negotiations on a Federal Facility Agreement (FFA) will begin in December 1995 with the EPA.

Concord NWS is currently under a Federal Facility Site Remediation Agreement (FFSRA) with the State of California, which was signed in 1992.

A Restoration Advisory Board (RAB) was formed in July 1995 and has 38 active members. Community members have shown a high level of interest in the Installation Restoration Program (IRP). Four committees have been formed and meet at least once a month. These committees include a procedures committee, a public relations committee, a documents review committee and a finance committee.

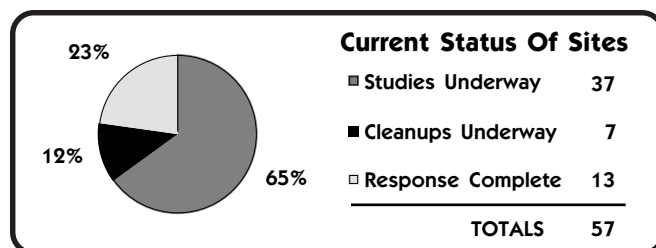
Thirty-seven sites in the Inland and Tidal Areas are in the Remedial Investigation/Feasibility Study stage (RI/FS). Thirteen sites are Response Complete (RC). Seven Litigation Area Sites are undergoing either post-remediation Long Term Monitoring (LTM) or are in the final stages of Remedial Action (RA). An RA for four Litigation Area Sites was completed in 1994. An RA for the three remaining sites will be completed in December 1995.

Four removal actions will begin in FY96 for two Inland and two Tidal Area Sites. The second LTM event of the Litigation Area Sites will begin in the spring of FY96. The Navy is also conducting Site Inspections (SIs) at 24 Solid Waste Management Units (SWMUs). A RCRA Facility Confirmation Report will be completed in FY97 for the SWMUs. As part of the Navy's goal to expedite the investigation process, the Navy is proposing to conduct Corrective Actions (CAs) at several of these sites so that an extensive Remedial Investigation (RI) is not required.

At three Tidal Area Sites, the Baseline Human Health Report is expected to be completed in FY96. Phase 1B of the RI will begin to evaluate groundwater contamination and the Qualitative Ecological Risk Assessment (QERA) report is expected to be completed in FY97.

For five Inland Area Sites, the final RI/FS reports are expected to be completed in FY97 and a Record of Decision (ROD) signed in FY98.

In FY94 and FY95, risks to human health and the environment were reduced due to an RA for the Litigation Area Sites. Cleanup consisted of excavating and disposing of 42,700 cubic yards of soil contaminated with heavy metals that exceeded hazardous waste levels. The sites were then graded and reseeded. The Department of Navy (DON) prosecuted claims to recover the costs of cleanup from 14 defendants and to require the owners of six contaminated properties adjacent to the installation to clean up their properties concurrent with the DON's cleanup. A LTM plan for groundwater is in effect to evaluate the success of restoration.



CONCORD NWS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Concord NWS is bound on the north by Suisun Bay and on the south and west by the city of Concord.

Soil and sediment are contaminated with metals and volatile organic compounds. Surface water is the pathway of greatest concern due to the direct interconnection of the Tidal and Litigation Areas to Suisun Bay and the lack of containment measures. The surface water runoff from Concord NWS is primarily to the north from the Inland and Tidal Areas, through the wetlands, into Suisun Bay.

Groundwater at Concord NWS is not used for drinking water due to its high Total Dissolved Solids (TDS) content. However, potable water wells available for use in drought years are located downgradient of the Inland Area Sites and could be affected by groundwater contamination. The groundwater pathway is currently being evaluated as part of the RI for the Tidal and Inland Area Sites.



NATURAL RESOURCES - Suisun Bay is a transition zone between saltwater and freshwater ecosystems and is interconnected to the Concord NWS wetland areas. This area contains a diverse population of fish and other aquatic wildlife. The Bay is also used for recreation. The upland and wetland areas at Concord NWS provide habitat for numerous flora and fauna and federal and state designated threatened and endangered species. These include the Salt Marsh Harvest Mouse, California Clapper Rail, California Black Rail, Tule Elk and the figwort family of plants including the Delta Tule Pea and Soft Bird's Beak.



RISK - A baseline human health risk assessment will be prepared for the Tidal and Inland Areas as part of the RI. Ecological risk assessments are currently ongoing for the Inland, Tidal and Litigation Areas. At the Litigation Area, this ecological assessment is being conducted in response to the concerns of the regulatory agencies that the RA cleanup levels specified in the 1989 ROD do not adequately protect flora and fauna. The Litigation Area ecological assessment is being conducted in coordination with the ongoing LTM program that was specified in the ROD for the Litigation Areas.

Twenty-nine sites are ranked as high relative risk in the DOD Relative Risk Ranking system at Concord NWS primarily because of threatened and endangered species in the sensitive wetland areas and recreational users in adjoining Suisun Bay. The close proximity of NWS to the Contra Costa County Water Wells surrounding Mallard Reservoir has also contributed to the high relative risk ranking. Risks to human health and the environment have been reduced due to a removal action for the Litigation Area Sites. This action removed 42,000 cubic yards of metals-contaminated soil which exceeded hazardous waste levels. The Navy is planning removal or RCRA Corrective Actions to bring contaminants to safe levels which will reduce immediate threats to human health and the environment and allow several sites to be closed out, rather than requiring the sites to undergo additional investigations.



RESTORATION PROJECTS - The RA for the Litigation Area Sites consisted of excavating contaminated soils, backfilling with clean wetland soils and restoring the excavated areas. The restoration activities were designed to enhance the wetland habitat for the two endangered species of concern, the Salt Marsh Harvest Mouse and the California Clapper Rail. During the RA, elevations were lowered in several areas to enhance the wetland area. In addition, "refugial mounds" were constructed to provide refuge for the Salt Marsh Harvest Mouse during periods of high tide. The excavated areas were revegetated with native species of wetland plants harvested from local areas as well as nursery-grown stock.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Concord NWS was placed on the NPL on December 16, 1994, primarily because of conditions at the Tidal and Litigation Area Sites. The Hazard Ranking System (HRS) Score of 50.00 was driven by the surface water

pathway, since these sites are subject to tidal inundation and have no containment measures such as runoff management structures. The Tidal and Litigation Areas have a direct interconnection to Suisun Bay.



LEGAL AGREEMENTS - A Federal Facilities Site Remediation Agreement (FFSRA) was signed by the DON, the California Department of Toxic Substances Control and the California Regional Water Quality Control Board, San Francisco Bay Region, on September 29, 1992. The agreement established a schedule for investigation and remediation for the Tidal Area and Inland Area Sites. The Litigation Area Sites were excluded from the agreement because the sites had already proceeded to cleanup. Negotiations with EPA Region IX and the State of California for an FFA agreement will begin in December 1995.

In FY91, the DON prosecuted claims to recover the costs of cleanup for the Litigation Area Sites from 14 defendants to require that the owners of six contaminated properties adjacent to the sites to clean up their properties concurrent with the DON's cleanup. The DON entered into seven Consent Decrees with the adjacent property owners and recovered costs for cleanup.



PARTNERING - A partnering meeting in FY93 between the Navy and contractors helped the RA project team set goals for the RA at the Litigation Area Sites. The environmental work at Concord has required close coordination with federal and state regulatory agencies to ensure protection of endangered and threatened species. The result is the generation of analytical data by the EPA that will be used to augment the Navy's RI sampling and analysis results. The EPA is performing chemical and biological analyses on samples collected in the Tidal Area to determine appropriate reference levels for metals. The EPA is also performing chemical and biological analyses on samples collected along the boundary of the Tidal Area Landfill to evaluate whether landfill leachate is migrating off-site. The EPA is analyzing split ecological samples using standard Contract Laboratory Program (CLP) procedures, where the Navy analyzed samples using Low Detection Limit (LDL) analytical methods. Also, the project team has worked together to revise the investigative approach for the landfill site to include a presumptive remedy, which will reduce the costs for the RI/FSs.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) held one meeting in 1990 and a draft charter was prepared. No other meetings were held but copies of environmental reports were sent to TRC members to review. The TRC was converted to a Restoration Advisory Board (RAB) in FY95. A public notice was issued inviting members of the communities to participate in the RAB. In April and May 1995 the Navy conducted site tours for 150 community members. The tour was followed by question and answer session led by the Navy and regulatory agencies. The first RAB meeting was held on July 20, 1995. The Navy and regulatory agencies have given technical presentations during the monthly RAB meetings. There are 38 active RAB members.



COMMUNITY RELATIONS PLAN (CRP) - A CRP was completed in May 1989. An updated CRP was completed in July 1995.



INFORMATION REPOSITORY - An Information Repository was established at the Central Contra Costa Public Library. An Administrative Record was established in 1988 and is maintained at the Naval Facilities Engineering Command, Engineering Field Activity, West in San Bruno, California. A copy of the Administrative Record documents is contained in the Information Repository.

CONCORD NWS HISTORICAL PROGRESS

FY83

An Initial Assessment Study (IAS) identified 28 potentially contaminated sites at Concord NWS. Fifteen sites were recommended for no further study. Thirteen sites were recommended for further investigation.

FY85

Sites 3, 4, 25 and 26 - A Confirmation Study (CS) addressed these sites and recommended further investigation.

Sites 5, 6, 13 and 16 - A CS addressed these sites. No further action was recommended.

FY86

Sites 3-6, 25 and 26 (Litigation Area Sites) - A final Remedial Investigation/Feasibility Study (RI/FS) was completed. Ten Remedial Actions (RAs) alternatives were identified.

Site 14 - An investigation was completed and slightly elevated levels of arsenic, chromium and lead were found in groundwater. However, it was later determined the elevated levels were naturally occurring and not from a source of contamination.

FY87

Site 27 - Petroleum products and solvents were reportedly disposed on the ground surface. The site was identified after the completion of the IAS and was added to a subsequent Site Inspection (SI).

Site 28 - A source of heavy metals was found during litigation proceedings with Potentially Responsible Parties (PRPs) involving other sites and this site was added to an ongoing Remedial Investigation (RI).

FY88

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - A revised final RI was completed and found elevated concentrations of arsenic, cadmium, copper, lead, selenium and zinc in soil. A second revised Feasibility Study (FS) was completed.

Sites 3, 26 and 28 - Clam bioassay test results indicated a potential for cadmium, lead and zinc to move into surface waters at these sites. Plant and earthworm bioassays indicated movement of arsenic, cadmium, copper, lead, selenium and zinc into plants and soil-dwelling organisms that have potential toxicological impacts and potential contamination of species higher on the food chain, such as birds and mammals, with heavy metals. The soil of the Tidal Area is generally underlain with clay silts of low permeability that impede contaminant movement downward. Groundwater contamination was considered unlikely, but groundwater studies were included in the RI/FS.

FY89

Sites 3-6, 25, 26 and 28 - An RA plan was completed and identified several alternatives for each site. A Record of Decision (ROD) signed in April 1989, specified the excavation of contaminated soil from the area in

each site designated for active remediation, disposal of contaminated soil in an existing Class I landfill, restoration of the excavated area and operation and maintenance, including monitoring. In addition to these actions, liming was specified for low pH soil at Site 6.

FY91

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - The DON prosecuted claims to recover the costs of cleanup for these sites from 14 defendants and to require the owners of six contaminated properties adjacent to the sites to clean up their properties concurrent with the DON's cleanup.

FY92

Sites 3-6, 25, 26 and 28 - A Remedial Design (RD) was completed for these sites.

SWMUs - Forty-nine Solid Waste Management Units (SWMUs) were identified in the RCRA Facility Assessment (RFA) prepared by California EPA as part of the RCRA Part B permit. Twenty-five SWMUs were proposed for RCRA Corrective Action.

UST 1 - There were three tanks which were removed using Concord NWS funding.

FY93

Sites 8, 14, 19, 23A, 23B and 24B - An SI found no evidence of previously reported contaminants: No munitions-filled railcars reported to have been buried at Site 8. No volatile or semi-volatile organic compounds or petroleum hydrocarbons were found in the groundwater samples from Site 14. No evidence of culverts, outfalls, or contamination sources along the suspected 2,000 ft length of Site 19. No indication of explosive activities or explosive chemicals in the soil at Explosive Ordnance Disposal (EOD) Sites 23A and 23B. No evidence of firing range activities or elevated metals soil concentrations at Site 24B.

Sites 13, 17, 22, 24A and 27 - An SI recommended further investigation of soil and groundwater at Site 13, groundwater at Site 17 and soil at Sites 22, 27 and 24A.

Site 13 - The SI recommended removal of Napalm thickener.

Sites 1, 2, 9 and 11 - An SI addressed these sites and found volatile and semi-volatile organic compounds and metals in soil and groundwater and xylene, arsenic and mercury in sediment. Further investigation recommended.

UST 1 - An Initial Site Characterization (ISC) to define the extent of gasoline contamination in soil was completed.

FY94

Sites 6, 25, 26 and 28 (Litigation Area Sites) - An RA was completed at four (of seven) Litigation Area Sites and consisted of excavating and disposing of 22,700 cubic yards of soil contaminated with arsenic, cadmium, lead, selenium, copper and zinc and then grading and revegetating the sites. LTM is in effect to evaluate the success of the cleanup.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 3-5 (Litigation Area Sites) - An RA is nearly complete for the remaining three Litigation Area Sites. Cleanup consisted of excavating and disposing of 20,000 cubic yards of soil contaminated with arsenic, cadmium, lead, selenium, copper and zinc and then grading and revegetating the sites. Only a small amount of planting remains. LTM began and is scheduled to continue for a minimum of 30 years, as required by the ROD to confirm that site contaminant levels continue to be below concentrations which require further remediation.

Site 14 - The three abandoned wells comprising this site were properly closed and sealed to prevent them from serving as future contaminant pathways to the aquifers below. The Well Closure Report was completed.

CONCORD NWS PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 2 and 11 (Tidal Area Sites); Sites 13 and 24A (Inland Area Sites) - An Engineering Evaluation/Cost Analysis (EE/CA), Action Memorandum, design documentation and public notice for a removal action are planned and expected to be completed for these four sites.

Sites 1, 2, 9 and 11 (Tidal Area Sites) - Phase 1A of the RI will be completed to evaluate soil/sediment/surface water contamination. Phase 1B of the RI will begin to evaluate groundwater contamination. The Sampling Results Tech Memo, the Nature of Contamination Report and the Baseline Human Health and Qualitative Ecological Risk Assessment (QERA) reports are expected to be completed. A Quantitative Ecological Risk Assessment will begin.

Sites 3-5 (Litigation Area Sites) - An RA will be completed.

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - The second LTM event of these recently remediated sites is planned to begin.

FY97

Sites 13, 17, 22, 24A and 27 (Inland Area Sites) - The final RI/FS reports are expected to be completed and the ROD signed in FY98.

Sites 13 and 24A (Inland Area Sites); Sites 2 and 11 (Tidal Area Sites) - Removal actions are planned and expected to be completed for these four sites.

Sites 1, 2, 9 and 11 (Tidal Area Sites) - A Quantitative Ecological Assessment Report is expected to be completed.

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - A QERA is expected to be completed. The QERA will be used, together with the LTM results to determine if the remediation has removed significant risks to ecological receptors and if a future RA is required.

SWMUs - An RFA Confirmation Report, to confirm the presence of contamination at each SWMU will be completed and forwarded to the federal and state regulatory agencies in response to the state issued RFA. SWMUs requiring further CA will be identified and placed in a regulatory program for continued investigation and remediation.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	28							
SI	21		1					
RI/FS	7				5		4	
RD	7						5	4
RA	4		3					9
IRA		1(1)		2(2)	2(2)			
RC	12	1		1				16
Cumulative Response Complete	40%	43%		47%				100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	24							
RFI			1	23				
CMS							10	
DES								9
CMI								9
IRA			10(10)		1(1)			
RC				14			1	9
Cumulative Response Complete				58%			62%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	3							
INV				1				
CAP	1		1			1		
DES				2				1
IMP					1	1		1
IRA			1(1)					
RC					1	1		1
Cumulative Response Complete					33%	67%		100%

CORONA NAVAL ORDNANCE CENTER NAVAL WARFARE ASSESSMENT DIVISION CORONA, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV
 Major Claimant: COMNAVSEASYSCOM
 Size: 129 Acres
 Funding to Date: To be determined
 Estimated Funding to Complete: \$0
 Base Mission: Provides materials and services to support ordnance systems
 Contaminants: POLs



Number of Sites:		Relative Risk Ranking of Sites:	
CERCLA:	1	High:	0
RCRA Corrective Action:	0	Medium:	0
RCRA UST:	1	Low:	0
Total Sites:	2	Not Evaluated:	0
		Response Complete:	2
		Total Sites:	2

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI	1							
RI/FS								
RD								
RA								
IRA								
RC	1							
Cumulative Response Complete	100%							
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV								
CAP	1							
DES								
IMP								
IRA								
RC	1							
Cumulative Response Complete	100%							

CORONADO NAVAL AMPHIBIOUS BASE

CORONADO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 125 Acres

Funding to Date: \$2,848,000

Estimated Funding to Complete: \$15,045,000

Base Mission: Provides facilities and services for support of amphibious, unconventional, in-shore, riverine, and special warfare

Contaminants: Paint, solvents, unexploded ordnance, ash, blasting grit, POLs, heavy metals



Number of Sites:

CERCLA: 5
RCRA Corrective Action: 0
RCRA UST: 1
Total Sites: 6

Relative Risk Ranking of Sites:

High: 4 Not Evaluated: 1
Medium: 0 Response Complete: 1
Low: 0 Total Sites: 6

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	5							
SI			4					
RI/FS								
RD				2				
RA						2		2
IRA					2(3)	2(2)		
RC	1							4
Cumulative Response Complete	20%							100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC			1					
INV								
CAP								
DES			1					
IMP			1					
IRA			1(1)					
RC								1
Cumulative Response Complete								100%

CROWS LANDING NAVAL AUXILIARY LANDING FIELD

CROWS LANDING, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: CINCPACFLT

Size: 1,225 Acres

Funding to Date: \$2,207,000

Estimated Funding to Complete: \$5,851,000

Base Mission: Provides practice field for Naval planes from Naval Air Station Moffett Field, Naval Air Station Lemoore, and Naval Air Station Alameda; provides maintenance support for aircraft

Contaminants: POLs, solvents, heavy metals, pesticides, scrap metal



Number of Sites:

CERCLA: 8

RCRA Corrective Action: 0

RCRA UST: 1

Total Sites: 9

Relative Risk Ranking of Sites:

High: 3

Medium: 2

Low: 1

Not Evaluated: 1

Response Complete: 2

Total Sites: 9

BRAC III

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	5		2					
SI	5		2					
RI/FS				6				
RD					3			
RA	1				3			
IRA				1(1)				
RC	2			3	1			2
Cumulative Response Complete	25%			62%	75%			100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC		1						
INV								
CAP				1				
DES					1			
IMP					1			
IRA								
RC								1
Cumulative Response Complete								100%

DIXON NAVAL RADIO TRANSMITTING FACILITY

DIXON, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVCOMTELCOM

Size: 1,285 Acres

Funding to Date: \$331,000

Estimated Funding to Complete: \$1,756,000

Base Mission: Provides transmitter support for Naval Communication Station, Stockton

Contaminants: Liquid waste, solvents, heavy metals, PCBs, POLs



Number of Sites:		Relative Risk Ranking of Sites:			
CERCLA:	4	High:	0	Not Evaluated:	1
RCRA Corrective Action:	0	Medium:	0	Response Complete:	0
RCRA UST:	0	Low:	3	Total Sites:	4
Total Sites:	4				

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	3	1						
SI			3		1			
RI/FS						3	1	
RD								4
RA								4
IRA								
RC								4
Cumulative Response Complete								100%

EL CENTRO NAVAL AIR FACILITY

EL CENTRO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 63,137 Acres

Funding to Date: \$8,786,000

Estimated Funding to Complete: \$66,799,000

Base Mission: Maintains and operates facilities; provides services and material to support operations of aviation activities, operation forces and other activities

Contaminants: Acid, asbestos, ash, plating waste, POLs, PCBs, solvents, heavy metals

Number of Sites:

CERCLA: 17

RCRA Corrective Action: 0

RCRA UST: 4

Total Sites: 21

Relative Risk Ranking of Sites:

High: 12 Not Evaluated: 4

Medium: 0 Response Complete: 4

Low: 1 Total Sites: 21



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	17							
SI	14		1					
RI/FS								12
RD			1					12
RA					1			12
IRA				4(6)	6(6)	1(1)		3(3)
RC	4					1		12
Cumulative Response Complete	24%					29%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	4							
INV	2					1		
CAP								2
DES		1						2
IMP			2					2
IRA								
RC			2					2
Cumulative Response Complete			50%					100%

EL TORO MARINE CORPS AIR STATION

IRVINE, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 4,855 Acres

Funding to Date: \$56,100,000

Estimated Funding to Complete: \$166,390,000

Base Mission: Marine Corps primary jet fighter facility on the West Coast; provides materials and support for aviation activities of the Marine Corps; provides housing for Marine Corps personnel

Contaminants: POLs, PCBs, pesticides/herbicides, trichloroethylene, volatile organic compounds



Number of Sites:

CERCLA: 24
RCRA Corrective Action: 1
RCRA UST: 18
Total Sites: 43

Relative Risk Ranking of Sites:

High: 21
Medium: 5
Low: 16
Not Evaluated: 1
Response Complete: 0
Total Sites: 43

NPL

BRAC III

EXECUTIVE SUMMARY

Marine Corps Air Station (MCAS) El Toro is located in Orange County, California about eight miles southeast of the City of Santa Ana and 12 miles northeast of the City of Laguna Beach. MCAS El Toro served as the center for Marine aviation operations on the Pacific Coast and was comprised of hangars, flight line areas, maintenance areas, fueling facilities, a clinic, a golf course and housing areas. Past operations that contributed to contaminated sites on the facility include: aircraft maintenance, vehicle maintenance, degreasing processes, painting, fuel storage, wash racks, aircraft refurbishing, sewage treatment, solid waste incineration and disposal, and fire-fighting training. Current operations include pollution prevention technologies to prevent further contamination. During routine water quality monitoring in 1985, the Orange County Water District (OCWD) discovered the organic solvent TCE in an irrigation well located about 3,000 feet west of the Station. Subsequent investigations by OCWD concluded that the organic solvent TCE and other volatile organic compounds (VOCs) detected in groundwater had originated at MCAS El Toro. Past operations and disposal practices are believed to have contaminated the groundwater in the vicinity of the Station. As a result of these findings the Station was placed on the National Priorities List (NPL) in February 1990. A Federal Facility Agreement (FFA) for MCAS El Toro was signed in October 1990.

Most of the land northwest of MCAS El Toro is used to grow oranges and other agricultural crops. Land to the south and northeast has been developed as commercial, light industrial and residential. Surface runoff and infiltration go to storm drainage channels and naturally occurring washes, sometimes crossing agricultural land, and eventually draining to San Diego Creek which feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands. Contaminant migration to the Upper Newport Bay Ecological Reserve and duck ponds on San Diego Creek which are used by wildlife is a concern. Contaminants can potentially migrate to agriculture and drinking water wells located downstream from El Toro.

The Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in January 1994. The RAB consists of over 50

members who meet on a monthly basis. A Community Relations Plan (CRP) was completed and two information repositories were established in FY91. A total of six fact sheets have been released.

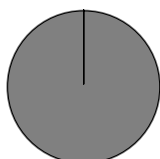
Currently, 43 sites are in the study phase of which 24 are CERCLA sites. Twenty-two CERCLA sites were evaluated during the Phase I Remedial Investigation (RI), which was completed in May 1993. The final work plan for the Phase II Remedial Investigation/Feasibility Study (RI/FS) was prepared in July 1995. Two additional sites were established for investigation in Phase II, bringing the total number of CERCLA sites to 24. Three removal actions have been completed and two are underway. All RCRA Solid Waste Management Units (SWMUs) of concern have been grouped into one site which is in the RCRA Facility Investigation (RFI) phase. There are 18 Underground Storage Tank (UST) sites.

In the future, at the CERCLA sites, RI/FSs will be completed for 23 sites in FY96. Records of Decision (RODs) will be completed at one site in FY96 and six sites in FY97. Engineering Evaluation/Cost Analysis (EE/CAs) will be completed for seven sites in FY96. Implementation of Corrective Measures is scheduled to be complete at the RCRA site in FY97. A removal action consisting of soil removal is expected to be completed for one UST site in FY97.

In 1993, MCAS El Toro was included in the Base Realignment and Closure (BRAC III) program. Operational closure date is targeted for July 1999. Approximately 63% of the property has been classified as requiring no further remediation before transfer. However, due to the distribution of contaminants, very few if any parcels are available for transfer. MCAS El Toro is currently working on a proposed agreement with the OCWD for the future Irvine Desalter project and other projects to mitigate the organic solvent TCE contamination in groundwater. This proposed joint effort, however, has been put on hold due to the Orange County bankruptcy. MCAS El Toro is now considering a Department of the Navy (DON) stand alone project which would involve cleanup of contaminated groundwater by pump and treat and reinjection. This issue is still to be resolved and has delayed the ROD for Site 18 (Regional Groundwater).

A success story is the UST Tiger Team which was formed to address UST compliance and closure issues. The Tiger team has identified 70 inactive USTs to be removed in 1995 and is currently developing a strategy to remove the remaining inactive USTs in 1996. In addition, the Tiger Team is developing a scope of work for necessary remedial actions at various former UST sites.

Current Status Of Sites



100%

■ **Studies Underway** 43
 ■ **Cleanups Underway** 0
 □ **Response Complete** 0

TOTALS 43

EL TORO MCAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Under MCAS El Toro are well-draining silty clay loams and fine sandy loams with moderate to high infiltration rates. Downgradient, in the Irvine Groundwater Subbasin, groundwater is used for irrigation. Contaminants can potentially migrate to drinking water wells in the middle aquifer several miles downstream from El Toro. Surface drainage near MCAS El Toro generally flows southwest. Off station drainage from the hills and upgradient irrigated farmlands combines with on-station runoff and flows into four main drainage channels. All four drainages become confluent with San Diego Creek southwest of the station. San Diego Creek feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands.



NATURAL RESOURCES - Approximately 75% of the native habitats of MCAS El Toro have been cleared for agriculture, housing and station operations. Native vegetation and animal species are primarily condensed in an approximately 1,200-acre area located in the northeast portion of the station. The natural habitat located in this portion of the station is used by many wildlife species. The area is heavily used by numerous wintering avian species, including neotropical birds and birds of prey. In addition to bird species, reptiles and mammals are also present in the natural area as well as a smaller number of amphibian species. Only one species, the California gnatcatcher, is listed as threatened under the Federal Endangered Species Act.

The Upper Newport Bay Ecological Reserve, into which the San Diego Creek flows, was established in 1975 to preserve and enhance the saltwater marsh ecosystem. Eight species classified by California as either rare or endangered are dependent on the Upper Newport Bay. A series of marshy wildlife refuges are located immediately adjacent to San Diego Creek. Many plant and animal species settle in this wildlife refuge.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted as part of the Remedial Investigations (RIs). Twenty-one sites were ranked as high relative risk in the Department of Defense (DOD) Relative Risk Ranking System. The high ranking was due to contaminated groundwater for seven of the sites, contaminated soil for eleven of the sites, contaminated soil and groundwater for two of the sites and contaminated surface water effecting ecological receptors for one site.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - MCAS El Toro was included on the National Priorities List (NPL) on 21 February 1990 based on a Hazard Ranking System (HRS) score of 40.83. The NPL listing was due to the presence of volatile organic compound (VOC) contamination in the groundwater.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) between the Department of the Navy (DON), the EPA, the California EPA (Cal-EPA) Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (CRWQCB), Santa Ana Region, was signed in October 1990. The agreement established lead and support agency roles, general scopes of work, schedules, and regulatory review turnaround times for key project milestones and specified that investigations begin with RIs and proceed to Records of Decision (RODs). The Installation Restoration Program (IRP) sites were grouped into three Operable Units (OUs): OU 1 includes contaminated regional groundwater, on and off Station (Site 18); OU 2A includes sites believed to be contributing to the regional VOC plume emanating from the southwest portion of station (Sites 24 and 25); OU 2B is station landfills (Sites 2 and 17); OU 2C is station landfills (Sites 3 and 5); OU 3 includes all remaining CERCLA sites (Sites 1, 4, 6-16 and 19-22).

In 1985, the OCWD discovered the organic solvent TCE in two off-site wells and initiated an investigation to determine the source and extent of contamination. In July 1987, the CRWQCB, Santa Ana Region, issued a Cleanup and Abatement Order that required MCAS El Toro to submit a Plan of Action (POA) to address off-site groundwater contamination. This became Regional Groundwater Investigation (Site 18).



PARTNERING - The BRAC Cleanup Team (BCT) has established a partnering agreement and team charter that incorporates the latest and most efficient management techniques to coordinate installation restoration (IR) activities. A team building seminar was held in October 1994.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in 1990 and converted to a Restoration Advisory Board (RAB) in January 1994. The RAB consists of over 50 members who meet on a monthly basis. All RAB meetings are open to the public. Technical presentations to assist RAB members in understanding complex environmental issues have been provided on an ongoing basis.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in April 1991 and the first Fact Sheet was completed in November 1991. A total of six fact sheets have been released. Seventeen public meetings have been held (includes RAB meetings).



INFORMATION REPOSITORY - In 1991, an Information Repository was established at the Heritage Park Regional Library in Irvine. An Administrative Record was also established in 1991. Administrative Record files are located at the El Toro BRAC Environmental Office and at Southwest Division (SWESTDIV), Naval Facilities Engineering Command (NAVFAC) in San Diego, California.

BASE REALIGNMENT AND CLOSURE



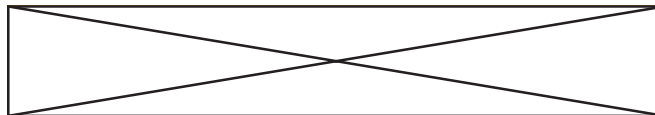
BRAC - In 1993, MCAS El Toro was included in the Base Realignment and Closure (BRAC III) program. The closure date is scheduled for July 1999.



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was established in October 1993. The BCT consists of representatives from the United States Marine Corps/Navy (USMC/Navy), Cal-EPA DTSC, and EPA Region IX.



DOCUMENTS - The latest BRAC Cleanup Plan (BCP) update will be completed in March 1996. The BCP will be updated again in March 1997. The Environmental Baseline Survey (EBS) was completed in April 1995. In the EBS, the Environmental Condition of Property was assessed according to Department of Defense (DOD) and American Society for Testing and Materials (ASTM) guidelines and the results are shown in the chart below. The final EBS identified 63% of the property as Category 1. EPA and Cal-EPA DTSC have given 100% concurrence.



LEASE/TRANSFER - It is anticipated that the Finding of Suitability to Transfer (FOST) or Finding of Suitability to Lease (FOSL) activities will start in 1997.

EL TORO MCAS



REUSE - The County of Orange and Cities of Irvine and Lake Forest formed the El Toro Reuse Planning Authority (ETRPA) in March 1994. In January 1995, the County withdrew from the ETRPA to pursue formation of a new reuse committee. In April 1995, the County of Orange was recognized as the new Local Redevelopment Authority (LRA). A reuse plan is expected to be completed by October 1996. In the absence of a reuse plan for the Station, reuse parcels have been identified according to the Station's existing land use presented in the MCAS El Toro Master Plan. In the November 1994 election, voters passed Measure A which proposed to make the installation into an airport. The issue will be voted on again in the future.



FAST-TRACK INITIATIVES - The MCAS El Toro team is implementing various fast track procedures such as using mobile laboratories for accelerated analytical turnaround times, and in-field decision making. Current removal actions are using industrial cleanup standards and the team will consider using industrial cleanup standards for final remedies. The team is using the latest immunoassay field screening kits to reduce analytical costs while maintaining Data Quality Objectives (DQOs). In addition, the team continues to evaluate other opportunities and methods to accelerate cleanup such as presumptive remedies, removal actions, and new technologies that may be applicable for MCAS El Toro site specific conditions.

HISTORICAL PROGRESS

FY82

Site 1 - An Interim Remedial Action (IRA) was completed in FY82 with the incineration of excess ordnance compounds at the Explosive Ordnance Disposal Range.

FY86

Sites 1-17 - An Initial Assessment Study (IAS) (equivalent to a Preliminary Assessment (PA)), completed in May 1986, identified 17 potentially contaminated sites at MCAS El Toro. Seven sites (Sites 6-8, 10, 12, 13 and 15) were found not to pose a threat to human health or the environment, and No Further Action (NFA) was recommended for these sites. Nine sites (Sites 1-3, 5, 9, 11, 14, 16 and 17) were recommended for further investigation. Remedial measures were recommended for Site 4.

Site 18 - A Regional Groundwater Investigation, was added after an investigation by the Orange County Water District (OCWD) determined that the organic solvent (TCE) and other volatile organic compounds (VOCs) detected in groundwater outside the Station had originated at MCAS El Toro.

Sites 19-23 - The EPA's review of the IAS and further investigations by the Navy resulted in five additional sites being recommended for further action. JP-5 jet fuel spills and leaks occurred from fuel bladders at the Aircraft Expeditionary Refueling Site (Site 19); waste oils, solvents, and waste solvent sludge at the Hobby Shop Building 626 (Site 20); spills and leaks from stored drums of chemicals at the Material Management Group Building 320 (Site 21); JP-5 spills and leaks from fuel bladders at the Tactical Air Fuel Dispensing System (TAFDS) (Site 22); and industrial wastes containing heavy metals around abandoned-in-place sewer lines from the old Wastewater Treatment Plant (WWTP) (Site 23).

Sites 1-23 - Meetings between the state, the EPA and the Department of the Navy (DON) in September 1986 resulted in these sites being recommended for further investigation in the Installation Restoration Program (IRP).

FY88

UST 1 - As a result of a refueling system upgrade, Underground Storage Tank (UST 1), was added to the IRP in 1988. As part of the system upgrade, a Soil Characterization Study was conducted at Tank 398 (UST 1) and petroleum hydrocarbon contamination was identified in soil below the tank. The Orange County Health Care Agency was notified and a report of an unauthorized leak was submitted by the DON in September 1988. The County directed MCAS El Toro to conduct an investigation to determine the extent of contamination.

Site 1 - An IRA consisting of access control was installed in July 1988 at the Explosive Ordnance Disposal Range and is expected to be in place until FY01.

FY89

Site 18 - An IRA was implemented at the Regional Groundwater Investigation Site that involved retrofitting perimeter monitoring well pumps, conducting a treatability study to determine the feasibility of using activated carbon to remove contaminants from groundwater, and constructing an activated carbon treatment plant. The plant began operation in June 1989 and was used to treat the organic solvent TCE-contaminated groundwater pumped from three existing wells to below detection limits. System operation stopped in 1993 on approval of the Santa Ana Region, California Regional Water Quality Control Board (CRWQCB) since the site was being handled in an ongoing Remedial Investigation/Feasibility Study (RI/FS).

UST 1 - A Preliminary Site Assessment was conducted to determine the lateral and vertical extent of soil contamination at the site.

FY90

Site 18 - A Site Inspection (SI) was completed at the Regional Groundwater Investigation Site and found significant levels of the organic solvent TCE in shallow groundwater at the base boundary and limited contaminant migration off site. In April 1989, the OCWD also completed an off-site groundwater investigation and documented the existence of a large dilute plume of the organic solvent TCE in groundwater that extended over three miles northwest from the base.

FY92

UST 1 - A Site Assessment was completed. Significant concentrations of petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylene (BTEX) were found in groundwater.

FY93

SWMU 1 - An RCRA Facility Assessment (RFA) was completed. A Visual Site Inspection, completed in August 1991, identified 289 potential solid waste management units (SWMUs) at MCAS El Toro, including approximately 30 sites that the CRWQCB, Santa Ana Region, had requested be further investigated. One hundred and fifty-seven SWMUs were recommended by the DON for further investigation. Field work was initiated in September 1992. The RFA was completed in March 1993. SWMUs of concern have been grouped into SWMU 1 for corrective measures.

UST 1 - An RI/FS was completed. Four remedial options were identified and a combination of the options was recommended to remediate the contamination.

FY94

Site 2 - Construction was completed at the Magazine Road Landfill involving the installation of slope stabilization.

PROGRESS DURING FISCAL YEAR 1995

FY95

OUs 2A, 2B, 2C and 3 (Sites 1-17, 19-22, 24 and 25) - Work plans were completed for Phase II of the RI/FS.

SWMU 1 - An RFA amendment was completed.

EL TORO MCAS PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

OUs 2A, 2B, 2C and part of OU 3 (Sites 2, 3, 5, 6, 8-10,12,15-17, 21, 22, 24 and 25) - An RI/FS will be completed.

OU 1 (Site 18) - A proposed plan and draft ROD will be completed.

UST 18 - Removal action consisting of soil removal will be initiated. Completion is expected in FY01.

Sites 4, 7, 11, 13, 14, 19 and 20 - Seven OU 3 sites will not be included in the Phase II Remedial Investigation (RI). Draft Engineering Evaluation/ Cost Analysis (EE/CAs) were submitted for public review in October 1995. Action memoranda are scheduled to be issued in the first half of 1996 and the final EE/CAs are scheduled to be completed by mid-1996.

FY97

Sites 4, 6, 11-16, 19-22, 24 and 25 - An RD will be started.

UST 1 - Corrective Action (CA) consisting of soil removal will be completed. A free product pilot study and a vapor extraction pilot study of the vadose zone is also underway and expected to be completed in FY97. In addition, several pump tests have been conducted.

UST 12 - Removal action consisting of soil removal will be initiated. Completion is expected in FY01.

SWMU 1 - Corrective Measures Implementation (CMI) will be completed.

OUs 2A, 2B, 2C and 3 (Sites 1-17, 19-22, 24 and 25) - RODs will be completed.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	24							
SI	1							
RI/FS			23					1
RD			1	14	8			1
RA						13	5	6
IRA	2(2)	1(1)				1(1)	1(1)	4(7)
RC						13	5	6
Cumulative Response Complete						54%	75%	100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	1							
RFI			1					
CMS			1					
DES								
CMI				1				
IRA								
RC				1				
Cumulative Response Complete				100%				
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV					1		1	1
CAP								
DES			3	3	6	2	3	1
IMP				1	1	5	3	8
IRA				1(1)	1(1)	5(5)	3(3)	8(8)
RC				1	1	5	3	8
Cumulative Response Complete				6%	11%	39%	56%	100%

FALLBROOK NAVAL ORDNANCE CENTER, PACIFIC DIVISION DETACHMENT FALLBROOK, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVSEASYSOM

Size: 8,853 Acres

Funding to Date: \$42,000

Estimated Funding to Complete: \$14,937,000

Base Mission: Stores fleet and marine Corps missiles and conventional ammunition; maintains facilities of air-launched missiles

Contaminants: POLs, heavy metals, unexploded ordnance, solvents, ash, electrolyte, acid, ordnance compounds, paint, PCBs, refuse, refuse with hazardous waste

Number of Sites:

CERCLA: 11

RCRA Corrective Action: 0

RCRA UST: 3

Total Sites: 14

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 5

Medium: 2 Response Complete: 1

Low: 6 Total Sites: 14



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	10				1			
SI	1				10			
RI/FS								
RD								
RA						10		
IRA								
RC	1					2	8	
Cumulative Response Complete	9%					27%	100%	
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1			1	1			
INV		1						
CAP						2		1
DES								
IMP							2	1
IRA	1(2)							
RC							1	2
Cumulative Response Complete							33%	100%

IMPERIAL BEACH OUTLYING LANDING FIELD

IMPERIAL BEACH, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 450 Acres

Funding to Date: \$349,000

Estimated Funding to Complete: \$19,682,000

Base Mission: Supports helicopter training in conjunction with NAS North Island

Contaminants: POLs, PCBs, inert material, blasting grit, solvents



Number of Sites:		Relative Risk Ranking of Sites:			
CERCLA:	5	High:	0	Not Evaluated:	1
RCRA Corrective Action:	0	Medium:	2	Response Complete:	0
RCRA UST:	0	Low:	2	Total Sites:	5
Total Sites:	5				

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	4				1			
SI			4					
RI/FS						1	4	
RD							1	4
RA								5
IRA					1(1)			
RC								5
Cumulative Response Complete								100%

LEMOORE NAVAL AIR STATION

LEMOORE, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: CINCPACFLT

Size: 39,173 Acres

Funding to Date: \$8,611,000

Estimated Funding to Complete: \$66,829,000

Base Mission: Maintains and operates facilities and provides services and materials to support operations of aviation activities

Contaminants: Heavy metals, vinyl chloride, volatile and semi-volatile organic compounds



Number of Sites:

CERCLA: 17

RCRA Corrective Action: 0

RCRA UST: 2

Total Sites: 19

Relative Risk Ranking of Sites:

High: 11 Not Evaluated: 0

Medium: 0 Response Complete: 0

Low: 8 Total Sites: 19

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	14							
SI	15							
RI/FS			5	12				
RD			1	3	3			
RA					2			5
IRA	1(1)			4(7)				
RC			1	9	1	1		5
Cumulative Response Complete			6%	59%	65%	71%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1							
INV	1							
CAP			1	1				
DES				1	1			
IMP					1	1		
IRA								
RC						2		
Cumulative Response Complete						100%		

LONG BEACH NAVAL COMPLEX

LONG BEACH, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVSEAS/SCOM/COMNAVFACENGCOM/CINCLANTFLT/BUMED

Size: 1,883 Acres

Funding to Date: \$24,677,000

Estimated Funding to Complete: \$123,862,000

Base Mission: Provided support and supplies for assigned surface craft and ships; drydocking; research and test work; housing; and hospital and clinical services

Contaminants: Chlorinated solvents, solvents, acid, blasting grit, paint, heavy metals, industrial wastewater, industrial liquid waste, asbestos, POLs, pesticides

Number of Sites:

CERCLA: 23
RCRA Corrective Action: 0
RCRA UST: 2
Total Sites: 25

Relative Risk Ranking of Sites:

High: 4
Medium: 8
Low: 5
Not Evaluated: 8
Response Complete: 0
Total Sites: 25



BRAC II

BRAC IV

EXECUTIVE SUMMARY

Long Beach Naval Complex includes Naval Shipyard (NSY) Long Beach, Naval Station (NS) Long Beach, Naval Station (NS) San Pedro and Naval Hospital (NAVHOSP) Long Beach. NS and NSY Long Beach are located on the south side of Terminal Island within the boundaries of the cities of Los Angeles and Long Beach. The NAVHOSP is located in the northeast corner of the City of Long Beach. NS San Pedro consists of three family housing areas and is located adjacent to the Defense Fuel Supply Center in San Pedro. The NS and NSY Long Beach complex has been an industrial facility for over fifty years. Typical operations that contributed to contaminated sites at NS Long Beach include: laundry and dry cleaning, steam plant operations, air compressor operations, boat working, wet paper destruction and paint bucket cleaning. Typical operations that contributed to contaminated sites at NSY Long Beach include: vehicle maintenance and repair, utility maintenance and operation, dip tanks, boiler repair and maintenance, vapor degreasing, machine shops, pipefitting, electrical shops, painting, abrasive blasting, weapons system shops, petroleum product and hazardous material storage. Typical operations that contributed to contaminated sites at NS San Pedro include: disposal of ships wastes, drilling muds and construction debris, fuel storage and fire fighter training. Operations at the hospital that contributed to contaminated sites on the complex are disposal of hospital wastes and storage of fuel. Current operations include pollution prevention technologies to prevent further contamination. Primary sites of concern are disposal pits into which all types of wastes were disposed of.

The Terminal Island complex is built on a manmade island constructed of hydraulic fill which is isolated hydrogeologically. Land use in the vicinity of the NS and NSY Long Beach is port-related, commercial, or industrial. There is no groundwater at the complex that is potable. The complex is bordered by the Los Angeles and Long Beach Harbors which are important nesting and feeding areas for many coastal migratory birds. Land use in the vicinity of the NS San Pedro facility is predominately residential, commercial and industrial. Groundwater beneath the facility is not used.

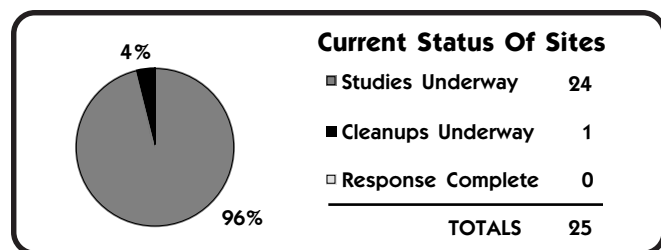
The NAVHOSP and NS Long Beach Technical Review Committee (TRC) was converted to a Remedial Action Board (RAB) in FY94. The NSY is covered by the same RAB. The RAB meets on a bimonthly basis. A Community Relations Plan (CRP) was completed and two information repositories were established in FY93. A RAB was formed for NS San Pedro in FY95 and meets quarterly. A CRP was completed in FY94. Information Repositories have been established at two locations.

Currently eight sites at NSY, eight at NS San Pedro and seven at NS Long Beach are in the study phase. All of these are CERCLA sites. At NS San Pedro, the Remedial Investigation/Feasibility Study (RI/FS) is underway at three sites. One site is awaiting funding to begin a Preliminary Assessment (PA). Four sites have completed Site Inspection (SIs) and are awaiting funds to begin cleanup. At the NSY, RI/FSs are underway at eight sites. At the NS Long Beach, RI/FSs are underway at seven sites. Three Interim Remedial Actions (IRAs) have been completed. Corrective measures are underway at the NS Underground Storage Tank (UST) site. During groundwater monitoring at the NAVHOSP UST site, contaminant levels were found to decrease so significantly, that regulatory agencies have agreed to no further action at the site.

In the future, RI/FSs will be completed at six sites in FY96 and 12 sites in FY97. Corrective Measures will be complete at one site in FY96. Five Records of Decision (RODs) are scheduled to be complete in FY97. A PA will be completed at one site in FY97.

The NS and NAVHOSP Long Beach were identified for closure in BRAC II. The NSY and NS San Pedro were identified for closure in BRAC IV. The NS Long Beach was closed 30 September 1994. NAVHOSP activities ceased 31 December 1993. The facility was officially closed 31 March 1994 and is now in caretaker status. A BRAC Cleanup Team (BCT) was formed and a BRAC Cleanup Plan (BCP) and Environmental Baseline Survey (EBS) were completed in FY94. Two Finding of Suitability to Transfer (FOSTs) were completed.

Site 7 (NS and NSY), Harbor Sediments, presents the biggest challenge for cleanup at the Naval Complex Long Beach. The initial estimate is \$1.2 billion to complete cleanup of the site. Phase I and II of the RI/FS are being combined into a single phase to streamline the study process. Another critical issue is the designation of groundwater underlying the Terminal Island facility as Beneficial Use Water. This designation requires that groundwater be cleaned up to Maximum Contaminant Levels (MCLs). The facility is working with the Regional Water Quality Control Board to redesignate the groundwater or exempt it from that portion of the basin plan.



LONG BEACH NAVAL COMPLEX RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - NS and NSY Long Beach are bordered on the north by oil fields, on the west and south by the Los Angeles Harbor and on the east by oil production reinjection wells and the Long Beach Harbor. Most of the complex is built on hydraulic fill which varies in thickness, but is typically less than 200 feet. The Mole, upon which Sites 1-4 are located, is a large U-shaped breakwater constructed in 1944 which forms the West Basin of the Long Beach Harbor. Potential for contaminant migration off-base is low. Groundwater movement is influenced by tides, has low velocity, and is also brackish and unusable. Surface drainage is discharged through storm drains to the West Basin of the Long Beach Harbor.

The NS San Pedro facility is bounded on the north by a trailer park and residential area, to the west by residential and commercial (cemetery) property, to the south by residential property and to the east by a large industrial complex. At NS San Pedro, regional surface drainage flows via ravines and large culverts into Los Angeles Harbor. Prior to 1971, surface drainage was to Harbor Lake. After 1971, Harbor Lake Dam was constructed. A small percentage of the potable water used within a 4-mile radius of NS San Pedro comes from groundwater. Groundwater beneath NS San Pedro is not used for any municipal or industrial purposes.



NATURAL RESOURCES - The Terminal Island area is highly industrialized. There is little or no natural terrestrial habitat within the Naval Complex as it was predominately constructed on hydraulic fill. The NSY is mostly paved; the NS does include some landscaped areas between the buildings. All the trees and shrubs and grass have been planted since the 1940s. The harbor is an important nesting and feeding area for many coastal migratory birds. The black-crowned night-heron has established an extensive rookery in several trees on the NS. This bird is considered a sensitive migratory bird and is afforded protection under the Migratory Bird Treaty Act. The California brown pelican and least tern, both Federal endangered species, use the NS and surrounding waters as foraging and resting areas.

At the NAVHOSP, there are no rare, threatened, or endangered plant or animal species.

The NS San Pedro consists almost entirely of graded, previously cleared land. The developed areas on and around the sites are landscaped with lawns and non-native shrubs and trees. At one site there is a small wetland at the bottom of a ravine which is inhabited by the California Gnatcatcher, a threatened species. Another site is visited by the San Pedro Blue Butterfly which is endangered.



RISK - The DOD Relative Risk Ranking System was applied to sites at NS San Pedro, NSY and NS Long Beach. Two sites at NS Long Beach and two sites at NSY Long Beach were ranked as high relative risk. The high ranking was due to contaminated soil and groundwater. A Baseline Risk Assessment was completed for Sites 1-6 (NS) in May 1995. A Baseline Risk Assessment will be completed for Site 7 in December 1995. A Baseline Risk Assessment should be completed for the NSY sites in March 1996.



RESTORATION PROJECTS

Revegetation of the hillside at Site 11 took place in February 1994.

REGULATORY ISSUES



PARTNERING - A partnering agreement was developed at the BRAC Cleanup Plan (BCP) strategy camp, 16 November 1994. The BRAC Cleanup Team (BCT) executed this partnering agreement.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - NS and NSY Long Beach formed a joint Technical Review Committee (TRC) in July 1992. The TRC met quarterly and included representatives from the installations, regulatory agencies and the community. The TRC was converted to a RAB in April 1994. The RAB meets at least once every other month. Originally the RAB started with 30 community members. Six members have resigned and now the RAB has 14 members. Members include representatives from the Ports of Los Angeles and Long Beach, a Homeowners Association, Natural Resources Committee, League of Women Voters, Earth Institute, and various other community representatives. The RAB has held four workshops to educate members.

A RAB was formed for NS San Pedro in FY95 and meets quarterly. The first RAB meeting was attended by several hundred angry people. Since then the RAB has gained widespread community support. The RAB is now composed of 20 community members and includes housewives, professionals and others.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in August 1993 for NS Long Beach and NAVHOSP. Four Fact Sheets have been released. A public meeting was held in July 1993 to inform the local community of the proposed actions. Another meeting is planned for FY96 when the proposed cleanup plan is complete. The CRP will be updated to include NSY. A CRP for NS San Pedro was published in May 1994. A Fact Sheet was completed in July 1992.



INFORMATION REPOSITORY - Information Repositories for NS Long Beach and NAVHOSP were set up in FY93 at the NS library and the Long Beach Public Library. An Administrative Record was also established in FY93 and is on file at NS Long Beach. Information from the Administrative Record is contained in the information repositories. Information Repositories for NS San Pedro are located at San Pedro Public Library and Miraleste Branch of the Palos Verdes Library.

BASE REALIGNMENT AND CLOSURE



BRAC - In March 1992, NS and NAVHOSP Long Beach were identified in the Base Realignment and Closure Act of 1990 (BRAC II). NSY Long Beach and NS San Pedro were identified in BRAC IV.



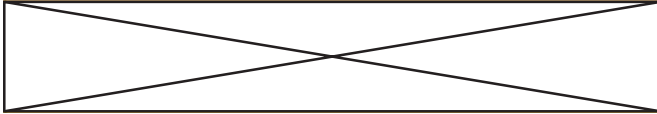
BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was formed in November 1993 for NS Long Beach and NAVHOSP. The same BCT will cover NSY Long Beach and NS San Pedro which were identified in a later BRAC list. The BCT is composed of the BRAC Environmental Coordinator, Cal-EPA Department of Toxic Substances and Control (DTSC) representative, and an EPA representative. The BRAC Cleanup Plan Project Team consists of a variety of technical, operational, reuse and administrative specialists. Immediately after formation, the BCT and the BCP Project Team participated in a three day "strategy camp" to develop options for implementing the cleanup program at the installations. The BCT has also accelerated the cleanup process through combining the Phase I and II RI/FS activities; shortening document review time by holding discussion workshops; improving communications by participating in telephone conferences; and developing a partnering agreement. The BCT has also been available during field operations to make real time decisions.



DOCUMENTS - The first BRAC Cleanup Plan (BCP) was completed in March 1994. The second draft was published in March 1995. A third update is due March 1996. A revised final Environmental Baseline Survey (EBS) was completed in April 1994 for NS and NAVHOSP. Cal-EPA Department of Toxic Substances Control (DTSC) did not concur with the Community Environmental Response Facilitation Act (CERFA) clean acreage identified in the final EBS because they felt the groundwater was not fully investigated. The groundwater is currently being

LONG BEACH NAVAL COMPLEX

addressed in the RI/FS. The EBS will be revised in FY96 to incorporate the NSY. EBSs will be completed for four areas at NS San Pedro by May 1996. In the NS and NAVHOSP EBS, the Environmental Condition of Property was assessed according to the DOD and American Society for Testing and Materials (ASTM) guidelines and the results from the revised final EBS are shown in the chart below.



LEASE/TRANSFER - The NS Savannah/Cabrillo housing was transferred in July 1994 to three federal agencies. A Finding of Suitability to Transfer (FOST) for Parcel B at NAVHOSP was completed in February 1995. Parcel B will revert back to the city in October 1995. A FOST for NAVHOSP Parcel A will be completed in FY96. Findings of Suitability to Lease (FOSLs) for NS will be completed in FY96.



REUSE - A Land Reuse Plan was completed in August 1993 for NS and NAVHOSP. For the NAVHOSP property, the City of Long Beach Naval Properties Reuse (NPR) Committee has proposed the development of a retail center. For the NS property, the proposed reuse is enlargement of the Long Beach and Los Angeles ports. The Reuse Plan will be revised in FY96 to incorporate the NSY.



FAST TRACK INITIATIVES - The following five DOD initiatives are being implemented: (1) identification of clean parcels, (2) partnering, (3) overlapping phases of the cleanup process, (4) improved contract procedures and (5) interfacing with the Reuse Plan.

HISTORICAL PROGRESS

FY83

Sites 1-7 (NS) and 7-12 (NSY) - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed in August 1983 for Naval Complex Long Beach. Twelve sites were identified: Sites 1-7 at NS and Sites 7-12 at NSY. Site 7 was split into NS Harbor Sediments and NSY Harbor Sediments. The IAS recommended no further action at Sites 1-12. EPA Region IX reviewed the IAS and indicated a need for additional work; therefore, all sites (Sites 1-12) were recommended for a Site Inspection (SI).

FY89

Sites 1-7 (NS), 7-13 (NSY) - A RCRA Facility Assessment (RFA) was completed as part of a Part B permit application. Thirteen potential solid waste management units (SWMUs) were identified. The first 12 SWMUs were the same as Installation Restoration Program (IRP) Sites 1-12 identified in the IAS. One additional site was identified on the NSY, the Tank Farm near Bldg. 303 (Site 13). The RCRA Facility Investigation (RFI) requirements are being covered as part the Remedial Investigation/Feasibility Study (RI/FS).

FY90

Sites 2, 5, 11, 12, 31, 32 (NS San Pedro) - A PA was completed at six sites.

FY92

NAVHOSP - A PA, completed in June 1992, identified no potentially contaminated sites at NAVHOSP Long Beach; therefore, no further action was recommended.

Site 6 (NS San Pedro) - A PA was completed in April.

FY93

Sites 1-7 (NS) and 7-13 (NSY) - A Site Inspection (SI) completed in November 1992 identified the following potential contaminants in the soil at the corresponding sites: Asbestos, blasting grit, refuse without hazardous materials and scrap metal at NS Site 1; acid, petroleum products, paint and solvents at NS Site 2; petroleum product sludge, petroleum products, refuse without hazardous waste, industrial liquids and industrial sludges at NS Site 3; blasting grit, asbestos, petroleum products and refuse at NS Site 4; construction debris, refuse without hazardous waste at NS Site 5; blasting grit, refuse without hazardous waste, unknown wastes and old boats at NS Site 6; and industrial liquids, low-level radiation, the chemical additive PCB, petroleum products and acid at NSY Site 7; chlorinated solvents at NSY Site 8; petroleum products and solvents at NSY Site 9; acids, solvents and others at NSY Site 10; blasting grit and heavy metals at NSY Site 11; blasting grit, paint, petroleum products and solvents at NSY Site 12; and petroleum products, acids and heavy metals at NSY Site 13. The report recommended further investigation at Sites 1-13. The SI further recommended that public access to NS Site 6 be limited.

FY94

Site 6 (NSY) - A PA was completed for which identified this site as a result of a real estate transfer.

Site 11 (NSY) - An Interim Remedial Action (IRA) which involved a protective covering to prevent off-site migration and reduce potential long-term risks from NSY Site 11 was completed in October 1993. An IRA which involved relocation of sandblast grit, placement of a Gunit cap and revegetation of the hillside was completed in February 1994.

UST 1 (NAVHOSP) - A removal action to remove tanks and contaminated soil was completed.

Sites 2, 5, 6, 11, 12, 31 and 32 (NS San Pedro) - SI completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 1-6 (NS) - An RI was completed.

Site 12 (NSY) - An IRA was completed which involved asphaltting of a dirt parking lot.

UST 1 (NAVHOSP) - An Initial Site Characterization to determine the extent of soil and groundwater contamination was completed. Groundwater monitoring required by the Regional Water Quality Control Board was completed in July 1995. No further action is required.

LONG BEACH NAVAL COMPLEX PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 7 (NS), 6, 7 (NSY) and 6, 31, 32 (NS San Pedro) - RI/FSs will be completed.

Sites 1-6 (NS) - FSs will be completed.

UST 1 (NS) - A removal action will be completed at the NEX Gas Station UST site to minimize free product contamination. Vapor extraction and groundwater treatment operations will be constructed and initiated at the site.

FY97

Sites 1-5 (NS) - RODs will be completed by December 1996.

Sites 8-13 (NSY) - RI/FSs will be completed.

Site 7 (NS San Pedro) - A PA will be completed.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	22			1				
SI	21		1					
RI/FS			6	12				
RD				6		7		
RA					10	4	1	7
IRA	1(2)	1(1)						
RC				1	10	4	1	7
Cumulative Response Complete				47%	48%	65%	70%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC			1					
INV								
CAP			1					
DES				1				
IMP			1		1			
IRA								
RC			1		1			
Cumulative Response Complete			50%		100%			

MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA

Engineering Field Division/Activity:	EFAWEST
Major Claimant:	COMNAVSEASYSKOM
Size:	5,646 Acres
Funding to Date:	\$35,260,000
Estimated Funding to Complete:	\$254,096,000
Base Mission:	Maintains and repairs ships; provides logistical support for assigned ships and service craft
Contaminants:	Heavy metals, volatile organic compounds, PCBs, pesticides, lead oxide, POLs



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	27	High:	26	Not Evaluated: 2
RCRA Corrective Action:	0	Medium:	4	Response Complete: 0
RCRA UST:	8	Low:	3	Total Sites: 35
Total Sites:	35			

BRAC III

EXECUTIVE SUMMARY

The Mare Island Naval Shipyard (NSY) is located about 25 miles northeast of San Francisco and lies on a peninsula in San Francisco Bay. This Navy yard was established in 1854. The shipyard launched 513 vessels, ranging from landing crafts to battleships and more recently, nuclear submarines. Its activities have included repair and maintenance of sea vessels, logistics support, refueling operations, dry-docking and ordnance operations. These past activities resulted in spills and disposal of contaminants such as heavy metals, volatile organic compounds, the chemical additive PCB, pesticides, petroleum hydrocarbons and lead oxide into the environment. A Federal Facilities Site Remediation Agreement (FFSRA) was signed in FY92. The Navy changed its operational processes to prevent further contamination.

The base is surrounded on the west and south sides by the waters of San Francisco Bay, on the east side by Mare Island Strait and on the north side by marshlands. Adjacent to the northwest boundary are the marshlands of the San Pablo Bay Wildlife Refuge. The City of Vallejo is located across the Mare Island Strait. Groundwater is designated for beneficial use; however, neither the shipyard nor adjacent communities use groundwater and the impermeable Bay Mud protects most of the deeper aquifer, which is the only useable aquifer. Contaminants can enter the Bay waters or marshlands via surface runoff or the groundwater system. Contaminants pose a threat to humans via contact.

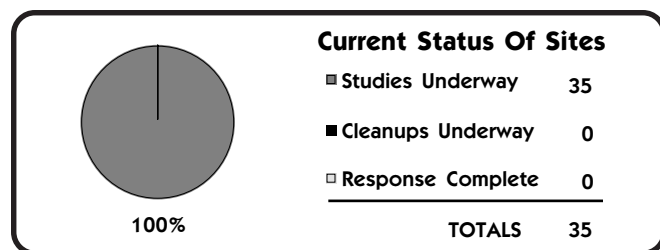
A Restoration Advisory Board (RAB) was established in FY94. The 25 member RAB includes representatives from the Navy, regulatory agencies and the community. The Community Relations Plan (CRP) was completed in FY92 and updated in FY94. A copy of the Administrative Record documents are contained in the Information Repository.

Of the total 35 sites, all 35 are currently in the study phase. Preliminary Assessments (PAs) are completed at 32 sites, Site Inspections (SIs) are

completed at 22 sites, Remedial Investigation/Feasibility Studies (RI/FSs) are underway at 32 sites, Interim Remedial Actions (IRAs) are completed at nine sites and IRAs are underway at seven sites. The completed IRAs include removal of contaminated soils and bulk containers.

In the next two years, IRAs are expected at ten sites and RI/FSs are expected at 13 sites. Eleven of the future IRAs are expected to include waste removal of contaminated soils and six are expected to include other remedial actions, such as groundwater treatment or bioremediation. Reduction of contaminants through these actions should reduce threats to humans or the environment.

The BRAC Cleanup Team (BCT) accelerated the cleanup process by designating investigation areas based on physical characteristics and reduced the number of RDs and RAs. The BCT also initiated removal actions to address lead contamination. The BRAC Cleanup Plan (BCP) was completed in FY94 and the latest revision is dated 21 August 1995. The land reuse plan was prepared in FY94. Reuse includes open recreational area, office/light industry, residential, heavy industry, historic districts and neighborhood centers.



MARE ISLAND NSY RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Mare Island NSY is enclosed by San Francisco Bay waters on the south (Carquinez Strait), east (Mare Island Strait) and west (San Pablo Bay) sides. Technically, it is not an island, but a peninsula attached to the mainland by diked wetlands and marshlands on the north end. The base is hydraulically isolated from the mainland. There are no flowing streams on base since watershed areas are small and rainfall is insufficient. The west side is mostly wetlands. Approximately 3,100 acres are wetlands, including dredge spoils, ponds and marshlands. The average annual rainfall is 17.41 inches. Groundwater is not used as drinking water; water is purchased from the local municipality. Contaminant migration on the land surface ultimately moves to Mare Island Strait or San Pablo Bay via surface channels, storm drains, or non-channelized flow through the marshlands. Contaminant migration via groundwater flow discharges into Mare Island Strait or San Pablo Bay. The "Bay Mud," which is not readily permeable, overlies most of the only useable aquifer, thus minimizing the possibility of contaminating the aquifer.



NATURAL RESOURCES - The San Pablo Bay National Wildlife Refuge (11,790 acres of open water and tidal wetlands) lies immediately adjacent to the base at its northern boundary. Ducks, terns, loons, grebes and cormorants depend on this refuge. It is home to the endangered California clapper rail, salt marsh harvest mouse and depleted subspecies of Samuel's song sparrow. There are no known endangered, rare, or threatened plant species on the base. A juvenile dungeness crab nursery is located in San Pablo Bay. The waters south of Mare Island NSY are an important recreational fishing area and migration route for steelhead trout, striped bass, sturgeon, American shad and Chinook and Coho salmon.



RISK - Twenty-six of the sites are ranked high relative risk in the DOD Relative Risk Ranking System. Over half of these sites are contaminated with metals and petroleum products. Slightly less than half are contaminated with the chemical additive PCB. Since the majority of these sites are slated for reuse, the potential exists for human contact. In general, there are no drinking water sources downgradient from these sites; however, the groundwater has been identified as "potentially useable for potential beneficial use." Because of the proximity of San Francisco Bay, contamination of the Bay is possible. Four sites are ranked medium, three sites are ranked, low, the remaining two have not been evaluated. The environmental baseline study was completed in February 1995. 500 acres were designated clean according to the guidelines in the Community Environmental Response Facilitation Act (CERFA).

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - The shipyard is not listed on the NPL. The shipyard was evaluated and received a score high enough to be included on the NPL; however, the State of California determined the shipyard should remain under the regulatory oversight of the State of California.



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement (FFSRA) was signed in September 1992. A revised schedule for submitting required documents was approved in June 1995.



PARTNERING - The BRAC Cleanup Team (BCT) negotiated a Memorandum of Understanding (MOU) with the city of Vallejo, the Fish and Wildlife Service and the installation. The MOU outlined the requirements for the cleanup program and drafted a Habitat Conservation Plan.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in FY90 and converted to a Restoration Advisory Board (RAB) in FY94. The 25 member RAB includes representatives from the Navy, regulatory agencies and the community. The RAB meetings are held on the fourth Thursday of each month from 1900 to 2100. The meeting venue is the City Auditorium in the City of Vallejo.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in FY92 and updated in FY94.



INFORMATION REPOSITORY - The administrative record and information repository were established in FY90. The repository is located at the City Library in the City of Vallejo. Public access to the information is during normal library business hours. A copy of the Administrative Record documents are contained in the Information Repository.

BASE REALIGNMENT AND CLOSURE



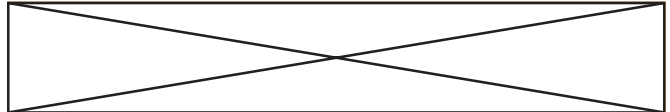
BRAC - The Base Realignment and Closure (BRAC) Commission recommended closure of the shipyard, relocating the Combat Systems Technical Command to Dam Neck, Virginia. Also, the family housing will be retained to support personnel at the nearby Naval Weapons Station Concord. The scheduled closure date is 1 April 1996.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT), formed in October 1993, has accelerated the cleanup process by designating investigation areas based on geologic and hydrogeologic conditions, physiographic features and environmental characteristics. This effort has reduced the number of RDs and RAs. The BCT also initiated removal actions to address lead contamination.



DOCUMENTS - The BRAC Cleanup Plan (BCP) was completed in FY94 and the latest revision is dated 21 August 1995.



REUSE - The land reuse plan was prepared in FY94. Its implementation will occur when the lease and transfer documents are completed. Reuse includes open recreational area, office/light industry, residential, heavy industry, historic districts and neighborhood centers.



FAST TRACK INITIATIVES - The activity is utilizing a strategic accelerated cleanup model to expedite the cleanup process. Shipyard personnel are performing some of the removal actions. The BCT has accelerated the cleanup process based on physical and environmental characteristics. This reduced the amount of RDs and RAs.

MARE ISLAND NSY HISTORICAL PROGRESS

FY83

Sites 1-15 - Completed a Preliminary Assessment (PA).

FY88

Site 5 - Completed a Site Inspection (SI) phase.

Site 22 - An Remedial Investigation/Feasibility Study (RI/FS) is underway with completion expected in FY96.

Sites 1, 2, 6-8, 10, 13, 16, 18, 20 and 24 - An RI/FS is underway with completion expected in FY97.

Sites 4 and 11 - An RI/FS is underway with completion expected in FY98.

Site 5 - An RI/FS is underway with completion expected in FY99.

Site 23 - An RI/FS is underway with completion expected in FY01.

Sites 3, 9, 12, 14, 15, 19 and 21 - An RI/FS is underway with completion expected in FY03.

FY90

UST 18 - Completed a PA.

FY91

Sites 1-3, 7, 9, 10-15 and 20 - Completed an SI.

Sites 17-19, 21-23 - Completed a PA and an SI.

FY93

Site 8 - Completed an IRA (waste removal - soil with heavy metals).

USTs 1-6 - Completed an IRA (waste removal - drums, tanks, bulk containers with petroleum products).

FY94

Site 7 - Two removal actions were begun. One to remove soil containing acids, sludge and heavy metals which should be completed in FY96. The second was to remove drums, tanks and bulk containers containing acids, petroleum product sludge and heavy metals with completion expected in FY96.

Site 20 - Two removal actions were started. One was to remove soils contaminated with acid, petroleum products, the chemical additive PCB and heavy metals with completion expected in FY96. The second action removed drums, tanks and bulk containers containing acid, petroleum products, the chemical additive PCB and heavy metals with completion expected in FY95.

Site 22 - A removal action was completed.

Site 24 - A removal action was completed to remove soils contaminated with heavy metals.

USTs 1-7 - Completed a PA.

PROGRESS DURING FISCAL YEAR 1995

FY95

Site 3 - A removal action is underway to treat groundwater to remove petroleum sludge, the chemical additive PCB, solvents and heavy metals. It is expected to be completed in FY00.

Site 7 - A removal action is underway to remove acids, petroleum products and heavy metals from the groundwater. It should be completed in FY99.

Site 13 - A removal action is underway to remove soils contaminated with the chemical additive PCB and will be done in FY96.

Site 15 - A removal action is underway to remove soils with petroleum products, solvents and heavy metals and should be completed in FY96.

Site 19 - A removal action was completed to remove drums, tanks and bulk containers contaminated with heavy metals. Another removal action is underway to remove soils contaminated with heavy metals and will be completed in FY96.

Site 20 - A removal action is underway to remove acids, petroleum products and heavy metals from the groundwater. This will be completed in FY99.

Sites 25-27 - Completed a PA and an SI.

USTs 1-7 and 18 - A Corrective Action Plan is underway. Expected completion FY98.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY 96

Site 5 - A removal action will begin for this site.

Sites 4,8, 9 and 16 - Removal actions will start to remove contaminated soil and treat contaminated groundwater.

Sites 11, 12 and 17 - Start removal action to remove soils contaminated with the chemical additive PCB.

Site 16 - Start a Remedial Design (RD). Expected completion FY98.

Site 21 - Start removal actions for groundwater treatment, bioremediation, soil vapor treatment and petroleum contaminated soil removal.

FY97

Site 3 - Start removal action to remove contaminated soil, completion is expected in FY00.

Site 3 - Start removal action for soil vapor treatment, completion is expected in FY00.

Sites 15 and 18 - Start removal action to treat groundwater.

Site 23 - Start removal action to remove wastes.

Sites 25 and 26 - Start an RI/FS. Completion is expected in FY97.

Sites 7, 18 and 20 - Start an RD. Completion is expected in FY98.

Site 16 - Start RA. Estimated completion FY99.

MARE ISLAND NSY PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	21	3						
SI	19	3						
RI/FS			8	5	3	2		9
RD					1	6	7	12
RA							5	21
IRA	3(3)	1(1)	6(7)	4(4)	2(3)	4(6)	5(8)	4(7)
RC			1				5	21
Cumulative Response Complete			4%				22%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	8							
INV								
CAP					8			
DES						8		
IMP								8
IRA	5(5)						3(3)	
RC								8
Cumulative Response Complete								100%

MIRAMAR NAVAL AIR STATION

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 23,413 Acres

Funding to Date: \$5,768,000

Estimated Funding to Complete: \$13,194,000

Base Mission: Provides facilities, services and materials to support operations of aviation activities

Contaminants: Heavy metals, POLs, volatile organic compounds



Number of Sites:

CERCLA: 15
RCRA Corrective Action: 0
RCRA UST: 0
Total Sites: 15

Relative Risk Ranking of Sites:

High: 1 Not Evaluated: 1
Medium: 7 Response Complete: 4
Low: 2 Total Sites: 15

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	10							
SI	8			2				
RI/FS	1		1		4			
RD				1	1	2		
RA			5		1	1	2	
IRA			5(5)	1(1)			1(1)	
RC	4		5	1	2		2	1
Cumulative Response Complete	27%		60%	67%	80%		93%	100%

MOFFETT FIELD NAVAL AIR STATION

MOFFETT FIELD, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: CINCPACFLT

Size: 3,700 Acres

Funding to Date: \$33,055,000

Estimated Funding to Complete: \$27,380,000

Base Mission: Provided support for antisubmarine warfare training and patrol squads; served as headquarters for Commander Patrol Wings of Pacific Fleet

Contaminants: Volatile and semi-volatile organic compounds, POLs, heavy metals, PCBs, battery acid, benzene, toluene, ethylbenzene, xylene, polynuclear aromatic hydrocarbons

Number of Sites:

CERCLA: 22

RCRA Corrective Action: 0

RCRA UST: 10

Total Sites: 32

Relative Risk Ranking of Sites:

High: 21

Medium: 0

Low: 0

Not Evaluated: 1

Response Complete: 10

Total Sites: 32

NPL

BRAC II



EXECUTIVE SUMMARY

Moffett Field Naval Air Station is located 35 miles south of San Francisco, California. Moffett Field was commissioned by the Navy in 1933 to support the West Coast dirigibles (blimps) of the lighter-than-air program. Since 1962, the Navy used the station to support anti-submarine warfare training and patrol squadrons. Moffett Field was closed as an active military base in July 1994 and was transferred to the National Aeronautics and Space Administration (NASA). Three squadrons were decommissioned and the remaining squadrons were transferred. Although NASA currently operates the Ames Research Center at Moffett Field, the Navy remains responsible for cleanup of Navy-related contamination. In April 1994, an Environmental Baseline Survey (EBS) was completed, that identified seven acres as Community Environmental Response Facilitation Act (CERFA) clean. Regulatory agencies have concurred on the CERFA clean acreage.

Wastes were generated at Moffett Field by aircraft maintenance activities, squadron operations, fuel management, fire fighter training, and other general facility operations. Wastes were disposed of in unlined ponds, landfills, and onto the ground. Leaks from Underground Storage Tanks (USTs) and fuel spills have contributed to environmental problems. Site types include landfills, USTs, a burn pit, ditches, holding ponds, French drains, maintenance areas, and spill sites. The most significant restoration activities involve the investigation and cleanup of four inactive landfills; a groundwater contamination plume under the eastern portion of the facility; UST and fuel handling facilities; and the Navy's contribution to a regional groundwater contamination plume under the western portion of the facility. The base was listed on the National Priorities List (NPL) in 1987. A Federal Facility Agreement (FFA) was signed in September 1990.

State and local governments and the public have expressed strong interest and have provided significant comments on cleanup activities at Moffett Field. Landfills located in sensitive ecological and recreation areas, contaminated potential drinking water sources, and the desire for a reuse

plan that includes residential, recreational, and industrial areas have resulted in newspaper articles, news stories, public meetings and intensive regulatory agency involvement. A Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in FY94. The RAB meets monthly. Fact sheets are distributed regularly and public meetings with community members are also held.

At the end of FY95, 21 of the 32 sites at Moffett Field were in the Study Phase, one was in the Cleanup Phase, and ten are Response Complete (RC). The Remedial Investigation/Feasibility Study (RI/FS) phase will be completed for all sites in FY96.

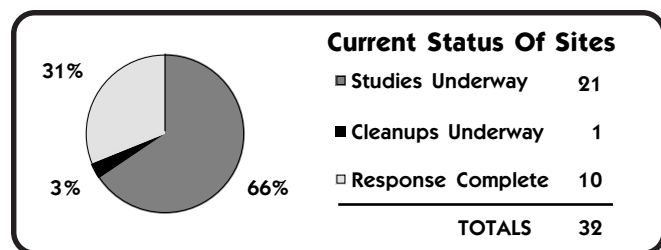
The BRAC Cleanup Team (BCT) has expedited many cleanup actions at Moffett Field. Tank and sump removals, groundwater treatment, and soil treatment are the primary areas of restoration at Moffett Field. To date, 106 tanks and sumps have been removed by the Navy. All remaining tanks were transferred with the base to NASA.

Petroleum contaminated soil has been excavated and treated at Sites 5, 12 and 18. A bioventing pilot test is underway and will be completed in FY96 at Site 5. Groundwater contaminated with volatile organic compounds and petroleum products has been treated at Sites 9 and 14. At Site 9, a pilot scale Soil Vapor Extraction (SVE) design has been completed. Full scale design will begin in FY96. At Site 14, completion of a Recirculating In-Situ Treatment (RIST) pilot test will be completed at two remaining USTs.

In FY96, design of drainage controls, a groundwater collection trench, multi-layer caps, gas vents, and a monitoring well system will begin at Sites 1 and 2. In FY97, at these two sites, Remedial Action (RA) will begin.

At East Side Aquifers, a Record of Decision (ROD) will be completed for groundwater treatment. Remedial Design (RD) and construction will begin by FY97. At West Side Aquifers, the design and construction of a pilot scale permeable reaction cell for groundwater extraction and treatment will be completed by FY97 and Operation and Maintenance (O&M) will begin.

Other fast-track initiatives include negotiating alternate petroleum cleanup levels that meet site beneficial uses and risk scenarios and coordinating cleanup designs during investigations. In addition, the BCT is working on incorporating the updated petroleum regulations toward a fast-track ROD for petroleum sites.



MOFFETT FIELD NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Moffett Field is located adjacent to the San Francisco Bay. The majority of groundwater under Moffett Field is considered a potential drinking water source. However, concentrations of naturally occurring metals in groundwater exceed acceptable state and federal risk levels. A plume of volatile organic compound (VOC) contamination in the groundwater from a site located near Moffett Field, known as the Middlefield-Ellis-Whisman (MEW) site, has migrated under the western portion of the facility. Contamination from Moffett Field has commingled with the regional MEW plume. There is also a VOC groundwater contamination plume under the eastern portion of the facility. Additionally, several small petroleum-contaminated groundwater plumes exist on both the eastern and western portions of the facility. Complex geology, including sand channels and silt and clay deposits, complicate cleanup activities.



NATURAL RESOURCES - Threatened or endangered species known or potentially occurring at Moffett Field include the California Brown Pelican, American Peregrine Falcon, Black-Shouldered Kite, California Clapper Rail, Western Snowy Plover, California Least Tern, Salt Harvest Mouse, and Marsh Gum Plant.



RISK - A phased Site-Wide Ecological Assessment (SWEA) is being conducted in accordance with EPA and state guidelines at Moffett Field. Phase I identified chemicals of potential concern, receptors, and habitats. It was determined that the current ecological receptors in Operable Unit (OU) 5 groundwater areas do not appear to be at risk from OU 5 contaminants. Phase II (in progress) characterizes ecological effects and risks to receptors.

Under the Department of Defense (DOD) Relative Risk Ranking System, 21 sites at Moffett Field received a high relative risk ranking primarily due to VOCs in groundwater, soil, and sediments. Potential human receptors include current and future occupational and recreational users, and future residential occupants. The most significant risk reduction activities involve the investigation and cleanup of four inactive landfills; a groundwater contamination plume under the eastern portion of the facility; Underground Storage Tank (UST) and fuel handling facilities; and the Navy's contribution to a regional, multiple responsible party, groundwater contamination plume under the western portion of the facility. Plans for FY96 and FY97 to reduce risk include construction of drainage controls and a groundwater collection trench, a monitoring well system, construction of multi-layered caps and gas vents, removal of USTs, a bioventing treatment system, a full scale Soil Vapor Extraction (SVE) system, construction of a Recirculating In-Situ Treatment (RIST) system, soil excavation and treatment, groundwater treatment, and Operation and Maintenance (O&M) of installed remedies.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Moffett Field was listed on the National Priorities List (NPL) in July 1987 with a Hazard Ranking Score (HRS) of 32.90.



LEGAL AGREEMENTS - The Navy and regulatory agencies signed a Federal Facility Agreement (FFA) in September 1990. The FFA documents the Navy agreement to undertake, seek funding, implement, and report on investigations and cleanup actions for the following current OUs and sites at Moffett Field:

OU 1 - Sites 1 and 2 (landfills)
OU 2 - (East) Sites 3, 4, 6, 7, 11, 13 and the eastern portion of Site 10 (soils)
OU 2 - (West) Sites 8, 16, 17, 18 and the western portion of Site 10 (soils)
OU 5 - East Side Aquifers, Site 36
OU 5 - West Side Aquifers, Site 28
OU 6 - Wetlands, Sites 25 and 27
Petroleum Sites - Sites 5, 9, 12, 14, 15 and 19
Station-Wide Sites 20-24

The Navy was identified as a principle responsible party to the MEW regional groundwater plume, but was not a signatory to the MEW Record of Decision (ROD), signed in May 1989. The Navy has agreed to follow provisions of the MEW ROD for the regional groundwater plume and at sites that overlie the plume (both on the western portion of the facility). No Further Action (NFA) was agreed to by the regulatory agencies for OU 2 - East, Sites 16 and 17 (OU 2-West), and all of Site 10. These sites fall under the MEW ROD.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC), formed in FY89, was converted to a Restoration Advisory Board (RAB) in FY94. Many of the former TRC members are now in the RAB. The RAB has 45 members who meet monthly to discuss cleanup program documents and issues. The RAB has many subcommittees.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was prepared in FY89 to provide guidance for community relations activities during the Remedial Investigation/Feasibility Study (RI/FS) process at Moffett Field. Public meetings have been held. Fact sheets and proposed plans have also been distributed to the public.



INFORMATION REPOSITORY - An Information Repository has been established at the Mountain View City Library. The repository contains a copy of the Administrative Record (the official file).

BASE REALIGNMENT AND CLOSURE



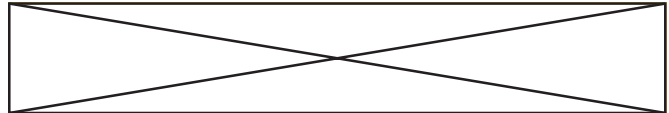
BRAC - The Base Realignment and Closure (BRAC) commission recommended NAS Moffett Field for closure in 1991. Ownership of Moffett Field was officially transferred in July 1994 to the National Aeronautics and Space Administration (NASA). Naval Air (NAVAIR) Manor, a former off base officer's housing complex, will be transferred to the city of Sunnyvale by the end of FY96. The cleanup of contamination, as a result of Navy's past practices, remains the Navy's responsibility.



BRAC CLEANUP TEAM - The Moffett Field BRAC Cleanup Team (BCT) has been established and is led by the Navy BRAC Environmental Coordinator (BEC), Stephen Chao. The BCT includes representatives of the EPA and California EPA.



DOCUMENTS - The first edition of the BRAC Cleanup Plan (BCP) was issued on 29 April 1994. The second edition of the BCP was issued on 28 February 1995. The next edition is expected to be an environmental business plan, which is an abbreviated version of the BCP. Revisions are expected annually.



LEASE/TRANSFER - A Finding of Suitability for Transfer (FOST) will be completed for NAVAIR Manor in FY96.



REUSE - Moffett Field was transferred to NASA in July 1994. NAVAIR Manor will be transferred to the city of Sunnyvale by the end of FY96.

MOFFETT FIELD NAS HISTORICAL PROGRESS

FY84

Sites 1-13 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed for both the NAS Moffett Field and Naval Auxiliary Landing Field (NALF) Crows Landing. A total of 13 potentially contaminated sites were identified: Sites 1-9 at NAS Moffett Field and Sites 10-13 at NALF Crows Landing. Sites 1-9 were recommended for further investigation. NALF Crows Landing is not a contiguous part of NAS Moffett Field and is not addressed in this narrative.

FY86

Sites 1-10 - A Confirmation Study (CS) (equivalent to a Site Inspection (SI)) was completed for Sites 1-9 and for a new Site 10 (Chase Park Area).

FY90

Site 9 - An Interim Remedial Action (IRA) that involved the removal of tanks was completed.

Sites 5, 12 and 15 - These sites were identified in the IAS under CERCLA regulations. Since contamination consisted solely of petroleum products, these sites were switched to the Underground Storage Tank (UST) program. Site 5 had a PA and an SI completed.

Sites 11-19 - The Department of the Navy (DON) identified Sites 11-19 at NAS Moffett Field. These new sites are unrelated to the NALF Crows Landing Sites 11-13 identified in the IAS. No PA or SI was conducted for these new sites; however, based on sampling data from other sources, all sites were moved into the ongoing Remedial Investigation/Feasibility Study (RI/FS).

Site 20 (Wetland Areas) OU 6 - This new site was identified and placed into the ongoing RI/FS. This site has outfall areas of groundwater and surface water that lead to marshlands, wetlands, storm water retention ponds, and a slough. The contaminants of concern (solvents, fuels, and the chemical additive PCB) probably came from many sites on the installation.

UST 2 - Initial Site Characterization (ISC) was completed and all 14 tanks were removed.

UST 3 - This UST site consists of six tanks at various locations. An ISC was completed.

UST 6 - This UST site consists of two tanks at the Shenadoah Housing Unit. An ISC was completed.

FY91

Sites 16-18 - Three IRAs involving groundwater remediation was completed.

UST 5 - Four leaking tanks at the NEX Gas Station were removed. Soil and groundwater sampling and contaminated soil and groundwater remediation is planned.

FY92

Site 19 - This site was originally identified during the RI/FS phase under CERCLA and was transferred to the UST program.

Sites 21-23 - These three sites were identified during Stage I of a Remedial Investigation (RI). An SI was completed. Potential contaminants include spilled solvents at Site 21, surface disposal of solvents at Site 22, and the chemical additive PCB and paint in the landfill at Site 23.

All Sites - A PA investigation was underway at all buildings at the installation that were likely to have generated or handled hazardous waste.

FY93

OUs 1 and 5 - The RI was completed.

OU 2 (Sites 8 and 14-18) - The RI was completed, following informal dispute resolution. The Remedial Design (RD) phase was started.

FY94

Site 12 - A removal action was completed that involved the excavation and treatment of petroleum-contaminated soil using catalytic oxidation.

Site 18 - An IRA to remove contaminated soil was completed. Recommendations for subsequent Remedial Actions (RAs) will be incorporated into the regular phases of the Installation Restoration Program (IRP).

Site 20 (Wetland Areas) OU 6 - The RI phase was completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

Completed Phase I Ecological Assessment.

Sites 1 and 2 - Completed the Feasibility Study (FS) phase.

Sites 3, 4, 6, 7, 11, 13 and portion of 10 - Completed no action Record of Decision (ROD).

Site 5 - Designed and constructed bioventing pilot test. Remove inactive USTs.

Site 9 - Designed and constructed Soil Vapor Extraction (SVE) pilot test.

Site 14 - Designed and constructed Recirculating In-Situ Treatment (RIST) pilot test at two USTs.

Site 18 - Soil excavation and treatment RA was completed.

Sites 21-23 - An RI was completed.

Site 24 - An SI was completed.

OU 6 (Wetlands) - An RI was completed.

OU 5 (East Side Aquifers) - An FS was completed.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Complete Phase II Ecological Assessment. Complete an RI and an FS for all sites.

Sites 1 and 2 - A ROD will be completed and an RD will begin.

Site 5 - Bioventing pilot test and full scale design will be completed. Negotiation for No Further Action (NFA) is in progress. Removal of inactive USTs is planned.

Site 9 - A full scale SVE design will be completed. Negotiation for NFA is in progress.

Site 14 - Completion of a closure report for two USTs and completion of a RIST pilot test at remaining two USTs is planned. Negotiation for NFA is in progress.

Site 15 - Soil excavation and treatment design will be completed and construction will begin.

Sites 22 and 23 - An FS will be completed and an RD will be started.

Site 24 - Investigation of fuel transfer pier will be completed. Complete soil treatment design for high speed refueling hydrants is expected.

Negotiation for NFA is in progress.

OU 6 (Wetlands) Sites 25 and 27 - An FS will be completed.

OU 5 (East Side Aquifers) Site 26 - A ROD will be completed and groundwater extraction and treatment will go to the RD phase.

West Side Aquifers - Completion of design and construction of pilot scale permeable reaction cell and groundwater extraction and treatment system is expected.

FY97

Sites 1 and 2 - An RA by constructing multi-layered caps and gas vents will start.

Site 5 - Construction of bioventing treatment system will be completed and Operation and Maintenance (O&M) will begin.

MOFFETT FIELD NAS

Site 9 - Construction of an SVE treatment system will be completed and O&M will begin there will be NFA.

Site 14 - Construction of a RIST system will be completed and O&M will begin or there will be NFA.

Site 15 - Soil excavation and treatment will be completed or there will be NFA.

Site 19 - Soil excavation and treatment for three USTs will be completed. Complete groundwater extraction and treatment construction for two USTs is expected and O&M will begin.

Sites 20 and 21 - Soil excavation and treatment will be completed and groundwater monitoring will begin or there will be NFA.

Sites 22 and 23 - The RD phase will be completed.

Site 24 - Complete soil treatment for high speed refueling hydrants or there will be NFA.

OU 5 - Begin construction of groundwater extraction and treatment RD phase and begin O&M.

OU 6 - Completion of soil excavation RD phase is planned.

West Side Aquifers - Completion of pilot scale permeable reaction cell construction for groundwater extraction and treatment system is expected and begin O&M.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	8							
SI	21							
RI/FS	4	11	7					
RD	3		5	5				
RA	2			2	5			4
IRA	3(5)	2(2)		3(3)	2(2)			2(2)
RC	3	7	1		5			6
Cumulative Response Complete	14%	45%	50%		73%			100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5		2					
INV	3							
CAP		5	3	1	1			
DES			4	1	2	2		
IMP			2		3	3		2
IRA			1(2)	1(1)	1(1)	3(3)		2(2)
RC			2		1	1		6
Cumulative Response Complete			20%		30%	40%		100%

MONTEREY NAVAL POST GRADUATE SCHOOL

MONTEREY, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: CNO

Size: 619 Acres

Funding to Date: \$1,365,000

Estimated Funding to Complete: \$562,000

Base Mission: Provides advanced technical education services

Contaminants: POLs, pesticides, solvents



Number of Sites:

CERCLA: 2
RCRA Corrective Action: 0
RCRA UST: 1
Total Sites: 3

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 1
Medium: 0 Response Complete: 2
Low: 0 Total Sites: 3

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	2							
SI	2							
RI/FS	1							
RD	1							
RA	1							
IRA								
RC	2							
Cumulative Response Complete	100%							
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV	1							
CAP				1				
DES				1				
IMP						1		
IRA								
RC						1		
Cumulative Response Complete						100%		

NORTH ISLAND NAVAL AIR STATION

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 2,520 Acres

Funding to Date: \$33,201,000

Estimated Funding to Complete: \$90,578,000

Base Mission: Maintains and operates facilities and provides services and materials to support operations of aviation activities

Contaminants: Heavy metals (arsenic, chromium, copper, lead), PCBs, volatile and semi-volatile organic compounds



Number of Sites:

CERCLA:	1
RCRA Corrective Action:	16
RCRA UST:	2
Total Sites:	19

Relative Risk Ranking of Sites:

High:	9	Not Evaluated:	0
Medium:	3	Response Complete:	6
Low:	1	Total Sites:	19

EXECUTIVE SUMMARY

Naval Air Station (NAS) North Island is located at the northern end of the peninsula that forms the San Diego Bay and borders the city of Coronado. Waste generation operations at NAS North Island that contributed to contaminated sites on the facility center around maintenance and repair of aircraft. In the past, liquid wastes were disposed of in the storm drain system which emptied into San Diego Bay and caused heavy metal contamination of bay sediments. Other primary sites of concern include a storage site where transformers containing oils with the chemical additive PCB leaked and a marsh, surface disposal area, pits, and landfills where liquid and solid wastes were disposed. Current operations include pollution prevention technologies to prevent further contamination. A Federal Facilities Compliance Agreement and a Cleanup and Abatement Order were issued in FY88 for the Industrial Waste Treatment Beds (Site 11). NAS North Island was issued a RCRA Hazardous Waste Facility Permit in FY89 and is expecting the permit to be reissued in FY96. As a result of the permit, all CERCLA sites must now comply with both RCRA and CERCLA requirements.

NAS North Island is bordered on the north and west by San Diego Bay and on the south by the Pacific Ocean. The east side of the base borders the City of Coronado which is predominantly residential. Presently, most of the surface drainage is controlled through storm drainage as the majority of the island is paved. The local community is concerned with the potential for contaminated groundwater to migrate toward the community. However, there is minimal potential for contamination in the groundwater to migrate off-base. Also, any migration of contaminants is toward the bay rather than the local community.

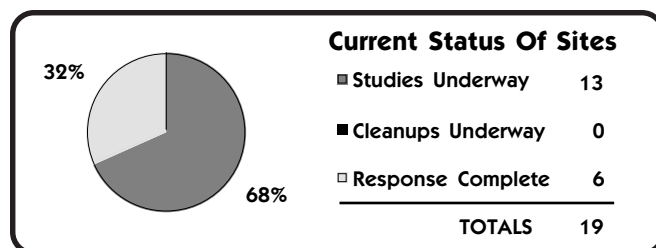
A Restoration Advisory Board (RAB) was established in FY94. The RAB consists of approximately 15 community members and a like number of military-related personnel. The RAB meets on a monthly basis. A Community Relations Plan (CRP) was completed in FY92. Two informa-

tion repositories, one at the base library and the other at the Coronado Public Library were established in FY92.

Currently, the majority of the sites are in the RCRA Facility Investigation (RFI) or Corrective Measures Study (CMS) phase. Eight RCRA Interim Measures/CERCLA removal actions have been completed and three are underway.

RFIs will have been completed at 15 sites and CMSs at 10 sites by the end of FY99. A final cleanup action is expected for approximately two-thirds of the sites.

NAS North Island is one of two installations in the Navy Environmental Leadership Program (NELP). The objective of NELP is to demonstrate innovative cleanup technologies and to help export successful technologies to other naval facilities. In addition, the EPA Superfund Innovative Technology Evaluation (SITE) Program is being used to do treatability studies at NAS North Island. The NELP and the SITE program have similar goals in terms of generating reliable performance and cost information on the technologies for use in evaluating cleanup alternatives for similarly contaminated sites.



NORTH ISLAND NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - NAS North Island is bordered on the north and west by San Diego Bay and on the south by the Pacific Ocean. Due to the general lack of relief, and the relative small size of the island, there is no pronounced surface drainage pattern. Two sloughs along the south coastline are the only identifiable natural surface drainages on the island. Presently, most of the surface drainage is controlled through storm drainage as the majority of the island is paved. Due to a slight gradient and minimal groundwater movement, minor measurable migration of contaminants from waste disposal sites has been detected. Almost all of North Island is covered with soils with a relatively low permeability. In the past, fresh groundwater was reported to emanate from springs near the southern shore of North Island. Past data indicates the existence of a 60 foot thick aquifer. When the majority of North Island was paved, and the runoff directed to the sea through storm sewers, recharge to the water table was reduced. Since that time, the fresh water has been displaced by intruding sea water. Potable water supply for North Island has been piped in from San Diego since the early 1900s.



NATURAL RESOURCES - The San Diego Bay is a major spawning area for ocean fishes and an integral element in the interconnected food web of the adjacent ocean waters. The bay is also used for numerous recreational activities such as power boating, sailing, water skiing, fishing, swimming, clamming and wading. Numerous species of marine and shore birds frequent the shoreline and some inland areas of North Island. Most of the nesting birds and a large population of black-tailed jackrabbits inhabit the unpaved and relatively undisturbed areas near runways and along the shoreline. Over 15 bird species reportedly nest at NAS North Island including significant populations of black crown night heron, burrowing owl, western gull, and the endangered California least tern. The snowy plover, listed as rare, also inhabits the station.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted on a site by site basis as part of the Remedial Investigation/Feasibility Study. Nine sites were ranked as high relative risk, under the DOD Relative Risk Ranking System. The high ranking was due to contaminated soil or sediments for seven of the sites and contaminated groundwater for six of the sites.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - NAS North Island is currently not listed or proposed for listing on the National Priorities List (NPL). The state has requested that EPA not propose the installation for listing on the NPL so the state can continue to work with the Department of the Navy to clean up sites under RCRA and CERCLA.



LEGAL AGREEMENTS - In December 1989, a RCRA Hazardous Waste Facility permit was issued to NAS North Island. To expedite the cleanup process, the Department of the Navy and EPA negotiated language into the installation's RCRA permit to allow the Department of the Navy latitude in choosing CERCLA or RCRA to address the contaminated sites. The permit specifies that the Department of the Navy must meet RCRA Corrective Action requirements; however, the Navy may submit information developed under the Installation Restoration Program (IRP) provided the IRP information clearly indicates how the RCRA requirements are met. As a result of the RCRA permit, all 12 CERCLA sites have been transferred and will be tracked as RCRA Corrective Actions. However, the Defense Environmental Restoration Program (DERP) requires all DOD facilities to comply with CERCLA. In order to meet both regulatory requirements, one document is being prepared for each phase of work that meets the requirements of both programs.



PARTNERING - Two teambuilding sessions have been held with regulators: a two day session in 1991 and a two day session in 1993.

NAS North Island is one of two installations in the Navy Environmental Leadership Program (NELP) that was initiated in May 1993. The other NELP installation is Mayport NS. This program is designed to "showcase" an activity for total environmental management through the demonstration of new and innovative technologies and management techniques to achieve and maintain environmental compliance and facilitate restoration. An NAS North Island NELP Team was formed in June 1993 and consists of personnel from the activity, Naval Facilities Engineering Field Division Southwest, regulators, and a NELP contractor. The Team is in the process of developing a Management Action Plan (MAP) that will be used as an active tool to document the status of all environmental programs at the installation and to provide direction for future actions required to maintain regulatory compliance. The draft MAP was completed in February 1994. In addition, the Team is pursuing innovative cleanup technologies for the existing sites. The NELP contractor has provided an initial screening of new technologies specific to NAS North Island's sites. In addition, the EPA Superfund Innovative Technology Evaluation (SITE) program is being used to do treatability studies on removing the chemical additive PCB and groundwater remediation technologies. The NELP has brought two EPA SITE Technologies to North Island and is working on six others (some pilot studies and demonstrations have been conducted).

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC) was formed in November 1990. The TRC was converted to a Restoration Advisory Board (RAB) in 1994. The RAB consists of approximately 15 community members and a like number of military-related personnel. The RAB functions well and participation is active. The RAB has been active in selection of technologies. In one instance the RAB objected to the selected technology and was instrumental in selecting an alternate technology which is now being implemented. NAS North Island has also been designated by the Chief of Naval Operations to be a pilot facility for RABs and to prototype a facility specific Pollution Prevention Plan.



COMMUNITY RELATIONS PLAN - The Community Relations Plan (CRP) was completed in November 1991. Several Fact Sheets have been released each year.



INFORMATION REPOSITORY - Two Information Repositories, one at the base library and the other at the Coronado Public Library, were established and two public meetings were held in February 1992. Information from the Administrative Record was placed in the information repositories for public access.

NORTH ISLAND NAS HISTORICAL PROGRESS

FY83

Sites 1-12 - Twelve potentially contaminated sites were identified during the Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in September 1983. Four sites (Sites 1, 6, 9, and 10) were recommended for further investigation. The study found that Sites 2-5, 7, 8, 11 and 12 posed no threat to human health or the environment, and no further action was recommended. EPA accepted the recommendation made in the IAS of no further action at Site 8, but expressed reservations about the recommendation for no further action at Sites 2-5, 7 and 12.

FY85

Sites 1, 6, 9 and 10 - A Verification Study, equivalent to a Site Inspection (SI), was completed in March 1985. The SI found elevated levels of cadmium, copper, and lead in sediment at the Shoreside Sediments (Site 1); the chemical additive PCB in soil at the Heritage Park Public Works Salvage Yard (Site 6); organic halide contamination in soil at the Chemical Works Disposal Area (Site 9); and heavy metals in soil at the Defense Property Disposal Area (Site 10).

FY88

Site 11 - A Federal Facilities Compliance Agreement (FFCA) was issued in 1988, and a Cleanup and Abatement Order was issued in June 1988, for the Industrial Waste Treatment Beds (Site 11). The FFCA requires the Department of the Navy to submit a report characterizing the hydrogeology beneath Site 11, including an evaluation of tidal effects and the hydraulic gradient; submit a proposed groundwater monitoring plan; construct new groundwater monitoring wells; and submit a post-closure plan in accordance with 40 CFR 264.118. The Cleanup and Abatement Order, issued by the California Regional Water Quality Control Board, requires the Department of the Navy to submit a technical cleanup plan, an effective remedial action plan to immobilize the chlorinated hydrocarbon plume, and quarterly monitoring reports. The FFCA Site Characterization Study for Site 11 began in December 1988 and was completed in January 1995. Hydrogeologic Assessment Report was completed in June 1988 for the Industrial Waste Treatment Beds (Site 11) and reported volatile organic compounds, cyanide, and metals contamination in soil.

FY89

SWMU 1002 - A RCRA Facility Assessment (RFA), completed in April 1989 by the California Department of Health Services, identified 81 potential solid waste management units (SWMUs) and three Areas of Concern (AOC) at NAS North Island. SWMUs 1-12 are the same as CERCLA Sites 1-12. SWMUs 8 and 13-81 were recommended for no further action. Of the three AOCs, only AOC 2, the Hazardous Waste Collection, Storage and Transfer Facility, was recommended for further

action due to concerns about soil contamination. This is now SWMU 1002.

Site 5 - Under California requirements, a Solid Waste Assessment Test (SWAT) and a Solid Waste Air Quality Assessment Test (SWAQAT) were completed in December 1988 for the Golf Course Garbage Disposal Area (Site 5). The SWAT found volatile organic compound contamination in the groundwater.

Site 6 - An interim measure which consisted of covering the site with plastic weighted down with sand was completed at the Seaview Heritage Park Salvage Yard.

FY91

SWMUs 82 and 83 - After completion of the RFA, two additional SWMUs, SWMU 82 and 83, were identified in FY91. SWMU 82, Bldg. 472 Sump, is now identified as part of the Industrial Waste Treatment System and will be handled under RCRA closure. SWMU 83, the Old Circular Runway, required further action.

FY92

SWMU 83 - RCRA Facility Investigation (RFI) was completed at SWMU 83. No further action was recommended. This site is expected to be closed upon approval of the new RCRA permit in FY96.

Sites 4 and 6 - Two separate removal actions involving the installation of fencing to restrict access to the sites were completed at Site 4 in August 1992 and at Site 6 in September 1992.

FY93

SWMU 1002 - RFI was completed at SWMU 1002. No further action was recommended. This site is expected to be closed after approval of the new RCRA permit in FY96.

FY94

Sites 2-4, 7 and 12 - An SI was begun in September 1991 for Sites 2, 3, and 12 and another SI was begun in December 1991 for Sites 4 and 7.

Both SIs were completed in December 1993 and the five sites were recommended for further action.

UST 1 - Underground Storage Tank (UST) 1 includes nine leaking USTs which are being addressed under the RCRA Corrective Action Program. These USTs were identified as potential SWMUs (SWMUs 112-114, and 126-131) and the investigation was conducted as a Phase I RFI to meet state requirements. The Phase I RFI involved sampling to characterize the nature and extent of contamination and was completed in FY94.

UST 2 - UST 2 involved 15 abandoned USTs that were leaking petroleum. The investigation of UST 2 was completed in FY94. All tanks were either removed or closed in place by April 1994.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 2, 3, 7 and 12 - RFIs were underway.

Sites 1, 4, 5, 6, 7 and 9-11 - Corrective Measures Studies (CMSs) were underway.

Site 1 - A bioassay and sampling and analysis work plan for the Shoreside Sediment outfalls was completed.

Sites 4, 6 and 10 - Time-critical removal actions were underway for washing the soil containing the chemical additive PCB under a Remedial Action Contract (RAC).

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 2, 3, 7 and 12 - RFIs will be complete.

Sites 4, 6 and 10 - Complete removal action to excavate and treat soil contaminated with the chemical additive PCB on-site.

Site 2 - Complete removal action to remove incinerator ash and cap Old Spanish Landfill.

FY97

Sites 1-4, 6, 7 and 9 - Corrective Measures Studies (CMSs) will be complete.

Site 11 - An Engineering Feasibility Study and a CMS will be completed in December 1996 at Site 11, the Industrial Waste Treatment Beds. As part of the industrial waste treatment plant, Site 11 will undergo RCRA closure and post-closure monitoring will be required through FY02. Based on preliminary results from the Site Characterization Study, the site is expected to require corrective action as part of the closure.

NORTH ISLAND NAS PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA								
SI	1							
RI/FS								
RD								
RA								
IRA								
RC	1							
Cumulative Response Complete	100%							
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	14							
RFI	10		4			1		
CMS				7	2	1		
DES					4	4		
CMI						3	3	2
IRA	3(4)	1(3)	4(6)	3(4)	4(4)	1(1)		
RC	4		1	1		2	1	7
Cumulative Response Complete	25%		31%	38%		50%	56%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC					1			
INV	1							
CAP								
DES								
IMP								
IRA	1(1)				1(1)			
RC	1				1			
Cumulative Response Complete	50%				100%			

NOVATO DEPARTMENT OF DEFENSE HOUSING FACILITY

NOVATO, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVFACENGCOM

Size: 829 Acres

Funding to Date: \$506,000

Estimated Funding to Complete: \$5,641,000

Base Mission: Houses military and Coast Guard personnel

Contaminants: Waste oils, waste paints, thinners, hydrocarbons



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	0	High:	0	Not Evaluated:
RCRA Corrective Action:	0	Medium:	1	Response Complete:
RCRA UST:	1	Low:	0	Total Sites:
Total Sites:	1			1

BRAC III

PROGRESS AND PLANS

UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV			1					
CAP			1					
DES			1					
IMP				1				
IRA				1(1)				
RC								1
Cumulative Response Complete								100%

OAKLAND FLEET AND INDUSTRIAL SUPPLY CENTER

OAKLAND, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVSUPSYSCOM

Size: 541 Acres

Funding to Date: \$6,357,000

Estimated Funding to Complete: \$31,540,000

Base Mission: Receives, stores, and issues military supplies and materials to fleet units and shore activities in the Pacific Basin

Contaminants: Paint, PCBs, acid, solvents, thinners, pesticides, asbestos, POLs



Number of Sites:

CERCLA: 25
RCRA Corrective Action: 0
RCRA UST: 3
Total Sites: 28

Relative Risk Ranking of Sites:

High: 12
Medium: 3
Low: 0
Not Evaluated: 0
Response Complete: 13
Total Sites: 28

BRAC IV

EXECUTIVE SUMMARY

The Oakland Fleet and Industrial Supply Center (FISC) is located on the eastern shore of the San Francisco Bay, within the Port of Oakland. The facility opened in 1941 and began support operations for World War II. Typical supply center operations that contributed to the contaminated sites on the facility include a hazardous waste storage yard, transformer storage area and other storage and maintenance areas. Primarily groundwater is affected, but there is also some soil contamination. Current operations at the facility include pollution prevention technologies to prevent further contamination. A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29, 1992. In September 1995, the Base Realignment and Closure (BRAC) Commission recommended closure of FISC Oakland. Closure plans are under development.

The area for the FISC was originally created by placing dredged sand fill over the existing marshlands and bay mud. The groundwater from the facility is assumed to discharge into San Francisco Bay. The likely receptors for contaminants at Oakland FISC are the aquatic organisms in San Francisco Bay. The closing base is anticipated to remain an industrial area, not to be converted to housing, so the chance of human exposure to contaminants should remain low.

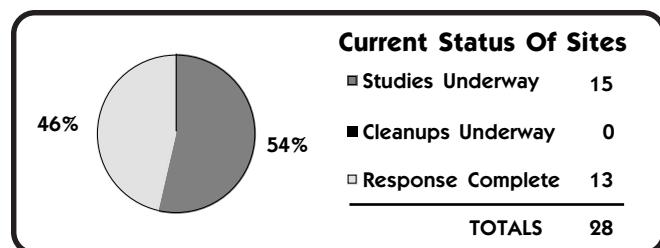
The Restoration Advisory Board (RAB) was formed April 5, 1995 and has 18 members. The installation's Information Repository was established in March 1994 at the Oakland Public Library.

According to the 1988 Preliminary Assessment (PA), hazardous wastes have never been disposed at the facility, they have always been removed from the facility for disposal. There were no active or inactive landfills. No major hazardous waste spills had been reported and no industrial waste treatment was performed on-site. The PA, which was completed in FY88 identified four potential sites, recommended that three sites be scheduled for a Site Inspection (SI) but all four of the original sites continued with an

SI, three have been completed, the fourth will be complete in FY96. Between FY89 and 91, following the original PA, 17 new sites were identified and added to the program during additional PAs. In FY93, four more sites were identified during an SI, but they were listed as Response Complete (RC), along with eight other sites, at the conclusion of the SI. In addition to the 12 sites listed as complete, 12 other sites have completed an SI. One final site will complete an SI in FY96. Eleven sites have been scheduled for a Remedial Investigation and Feasibility Study (RI/FS), all are scheduled for completion by FY98. Eight sites are scheduled to complete a Remedial Design (RD) in FY99, followed by a Remedial Action (RA) phase, to be completed in FY01. There are no RCRA Corrective Action sites at the installation. Three RCRA Underground Storage Tank (UST) sites were identified during an Initial Site Characterization (ISC) (equivalent to a PA) in FY89. One UST site is undergoing an Investigation (INV) phase and all three sites are undergoing a Corrective Action Plan (CAP) phase, all of these should be complete in FY96. Also in FY96, two sites will complete the Design (DES) phase and begin Implementation (IMP), which will be complete in FY97. The third UST site will complete DES in FY97 and IMP in FY98. Completion of cleanup for the UST sites is concurrent with Long Term Monitoring (LTM), which continues through FY03.

There were a number of successful cleanup actions in FY95. Emergency removal actions were completed at 12 sites for the cleanup and removal of contaminated sludge and sediment inside storm drains and catch basins. The contaminated media was put into containers and disposed of at an appropriate off-site facility. Contaminants of concern were SVOCs and metals. A Time Critical Removal Action (TCRA) was completed for removal of contaminated soil and sandblasting grit. A Remedial Action Plan (RAP) (equivalent to a CERCLA Record of Decision (ROD) for the state of California) started in FY95 and will be complete in FY96. It will formally confirm a "no action" decision at 11 sites. Community relations efforts are being conducted for the Remedial Action Plan (RAP).

Additional successes started in FY95 and will be completed in FY96. A TCRA for removal of contaminated soil, started in FY95, is planned to begin on six sites in FY96. Contaminants of concern are petroleum products, volatile and semi-volatile organic compounds and the chemical additive PCB.



OAKLAND FISC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - The area for the FISC was originally created by placing dredged sand fill over the existing marshlands and bay mud on the eastern shore of the San Francisco Bay. The entire site is flat except where slopes have been accentuated by differences in the settling fill. The groundwater under the FISC is at a depth of 10 to 20 feet, and is assumed to discharge into San Francisco Bay.



NATURAL RESOURCES - The likely receptors for contaminants at Oakland FISC are the aquatic organisms in San Francisco Bay. Since the base property is mostly paved, there is little chance for terrestrial animals or humans coming in contact with contaminants in water or soil. The closing base is anticipated to stay an industrial area, not be converted to housing, so the chance of human exposure to contaminants should remain low.



RISK - A base-wide Ecological Risk Assessment (ERA) and Human Health Risk Assessment (HHRA) were partially completed in FY95. Final ERA and HHRA are planned in FY96, under Phase II of the RI/FS.

DOD's Relative Risk Ranking system was used to rank the risk factors for all the sites on the installation in FY95. Of the 28 sites (CERCLA and UST sites), 12 received a high risk ranking. All the sites were ranked high for groundwater contamination. There is a potential pathway for migration of petroleum products, volatile and semi-volatile organic compounds and the chemical additive PCB through the groundwater pathway into San Francisco Bay. Aquatic receptors are the concern, if the groundwater is proven to migrate off-base. Since the base is likely to remain an industrial setting, and is mostly paved, the likelihood of terrestrial animal or human receptors is low.

REGULATORY ISSUES



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29, 1992. The FFSRA required the Navy to prepare a Scoping Document. The Scoping Document was completed on December 30, 1992 and recommended an Extended Site Inspection (ESI) for Sites 1, 4, 5 and 18-21 and an RI/FS for Sites 2, 3 and 13-15. Thirteen sites (Sites 6-12, 16, 17 and 22-25) were recommended for no further action.



PARTNERING - A partnering arrangement has been in place since FY92 between Navy representatives, Department of Toxic Substances Control (DTSC) representatives and Regional Water Quality Control Board (RWQCB) representatives. The partnering arrangement has accelerated the progress of the Installation Restoration Program (IRP) at Oakland FISC.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Restoration Advisory Board (RAB) was formed April 5, 1995 and has 18 members. Meetings are held once every two months. The RAB has allowed a greater sharing of information about the IRP with the community.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was finalized in November 1993.



INFORMATION REPOSITORY - An Administrative Record for Oakland FISC was established in FY92. A copy of the Administrative Record is housed in the installation's Information Repository, established in March 1994, and is available for public viewing at the Oakland Public Library on 14th Street in Oakland, California.

BASE REALIGNMENT AND CLOSURE



BRAC - In September 1995, the Base Realignment and Closure (BRAC) Commission recommended closure of the Fleet and Industrial Supply Center (FISC), Oakland. The proposed closure date is September 1998. Closure plans are under development.



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) will be established in February 1996.



REUSE - The base reuse plan will be completed in FY96.



LEASE/TRANSFER - The Navy has started leasing parcels to the Port of Oakland, under a special legislation, for commercial shipping use.

OAKLAND FISC HISTORICAL PROGRESS

FY88

Sites 1-4 - A Preliminary Assessment (PA), completed in March 1988, identified four sites with groundwater contaminated with petroleum products and soils contaminated with volatile organic compounds, the chemical additive PCB, pesticides, and fuels. The PA recommended three sites (Sites 1-3) for further study, but all four sites have gone on for further study.

FY89

USTs 1, 5 and 8 - Three RCRA Underground Storage Tank (UST) sites were identified during Initial Site Characterization (ISC) (equivalent to PA).

FY90

Sites 5-8 and 18-21 - Eight additional sites added to program and a PA was completed.

FY91

Sites 9-17 - Nine additional sites added to program and a PA was completed.

FY93

All Sites - A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29, 1992.

Sites 2, 3, 6-17 and 22-25 - Site Inspections (SI) were completed for 18 sites. Four of these were new sites (Sites 22-25). At the completion of the SI, 12 sites (Sites 6-11, 16, 17 and 22-25) were listed as Response Complete (RC), no further actions at the sites.

USTs 1 and 5 - Interim Remedial Actions (IRAs) for tank removal were complete.

FY94

Sites 2, 3 and 13-15 - Phase I of the Remedial Investigation (RI) started.

Sites 18, 20 and 21 - SI completed for three sites.

USTs 1, 5 and 8 - Investigation (INV) phase started for UST 8. Corrective Action Plan (CAP) was started at USTs 1 and 5.

UST 8 - IRA for tank removals was started. It will continue through FY03.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 1, 5 and 19 - SI was completed.

Sites 1-4, 12-15 and 18-21 - Completed an emergency removal action at 12 sites, for the cleanup and removal of contaminated sludge and sediment inside storm drains and catch basins. Completed an Extended Site Inspection (ESI), which included samplings of the soil, groundwater and storm drain sediment.

Sites 1, 4, 15 and 19 - Started documentation for a Time Critical Removal Action (TCRA) of contaminated soil.

Sites 2, 3 and 13-15 - The Phase I of the RI was completed.

Site 5 - Proposed for no further action.

Sites 6-11, 16 and 22-25 - Started Remedial Action Plan (RAP), equivalent to a CERCLA Record of Decision (ROD) for state of California, to document a "no action" on this site. Community relations efforts were conducted for the RAP.

Site 17 - A radiological survey is underway. If clearance is issued by Radiological Affairs Support Office (RASO), this site will be included in a No Action RAP.

Site 21 - Completed TCRA for removal of soil contaminated with sand blasting grit.

UST 8 - As part of an on-going IRA, three known abandoned USTs and contaminated soil were removed. CAP phase was started.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Site 1, 4, 15 and 19 - The effort for the TCRAs requested in FY95 will begin. Site 1 will have removal of 30 cubic yards of soil contaminated with SVOCs, mercury and lead. Site 4's removal action is for 540 cubic yards of soil contaminated with the chemical additive PCB and pesticides. Two hundred-fifteen cubic yards of soil contaminated with the chemical additive PCB will be removed from Site 19.

Sites 1-4, 13, 15, 18, 20, and 21 - Phase II RI/FS will start and will be complete in FY98.

Site 4 - SI will be completed.

Sites 5 and 17 - Two sites are expected to be included in RAP for no further action.

Sites 6-11, 16 and 22-25 - State regulators will approve the RAP for no action at 11 sites. Following the signing by state regulators and concurrence by the FISC Commanding Officer, the public will be notified of the decision.

USTs 1, 5 and 8 - CAP phase will be complete for UST 8. The Design (DES) phase will be completed at USTs 1 and 5 and start for UST 8. The Implementation (IMP) phase will start for USTs 1 and 5.

FY97

Sites 1-4, 13, 15, 18, 20 and 21 - A Phase II RI/FS Study, to start in FY 96, will be completed for nine sites.

USTs 1, 5 and 8 - IMP phase will be complete at USTs 1 and 5 and start at UST 8. The IMP at UST 8 is scheduled for completion in FY98.

OAKLAND FISC PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	21							
SI	21	3	1					
RI/FS					11			
RD						8		
RA								8
IRA		3(3)		6(6)				
RC	1	12		1		3		8
Cumulative Response Complete	4%	52%		56%		68%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	3							
INV			1					
CAP			3					
DES			2	1				
IMP				2	1			
IRA	2(2)							1(1)
RC								3
Cumulative Response Complete								100%

OAKLAND FLEET AND INDUSTRIAL SUPPLY CENTER ALAMEDA ANNEX

ALAMEDA, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVSUPSYSCOM

Size: 81 Acres

Funding to Date: \$6,557,000

Estimated Funding to Complete: \$19,160,000

Base Mission: Receives, stores, and issues both not-ready-for-issue and ready-for-issue aviation materials

Contaminants: Acid, asbestos, heavy metals, PCBs, volatile organic compounds



Number of Sites: 8

CERCLA: 8

RCRA Corrective Action: 0

RCRA UST: 0

Total Sites: 8

Relative Risk Ranking of Sites:

High: 2

Medium: 5

Low: 0

Not Evaluated: 0

Response Complete: 1

Total Sites: 8

BRAC IV

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	8							
SI	2	6						
RI/FS				7				
RD						2	1	
RA							2	1
IRA	1(1)	1(1)		1(1)				
RC	1				4		2	1
Cumulative Response Complete	12%				62%		88%	100%

OAKLAND NAVAL MEDICAL COMMAND, NORTHWEST REGION

OAKLAND, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: BUMED

Size: 183 Acres

Funding to Date: \$432,000

Estimated Funding to Complete: \$4,364,000

Base Mission: Directs comprehensive health care services for the Navy

Contaminants: POLs



Number of Sites:

CERCLA: 0

RCRA Corrective Action: 0

RCRA UST: 1

Total Sites: 1

Relative Risk Ranking of Sites:

High: 0

Medium: 0

Low: 0

Not Evaluated: 1

Response Complete: 0

Total Sites: 1

BRAC III

PROGRESS AND PLANS

UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV	1							
CAP			1					
DES			1					
IMP					1			
IRA					1(1)			
RC					1			
Cumulative Response Complete					100%			

PICO RIVERA MARINE CORPS RESERVE TRAINING CENTER

PICO RIVERA, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 1 Acre

Funding to Date: \$150,000

Estimated Funding to Complete: \$0

Base Mission: Provides training for Marine Corps Reserve Personnel

Contaminants: POLs



Number of Sites:

CERCLA: 0

RCRA Corrective Action: 0

RCRA UST: 1

Total Sites: 1

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0

Medium: 0 Response Complete: 1

Low: 0 Total Sites: 1

PROGRESS AND PLANS

UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1							
INV								
CAP								
DES								
IMP		1						
IRA								
RC		1						
Cumulative Response Complete		100%						

POINT MOLATE NAVY FUEL DEPOT

RICHMOND, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVSUPSYSCOM

Size: 1,133 Acres

Funding to Date: \$3,699,000

Estimated Funding to Complete: \$18,564,000

Base Mission: Provides supply and support services to fleet units and shore activities

Contaminants: PCBs, polynuclear aromatic hydrocarbons, toluene, volatile and semi-volatile organic compounds



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	4	High:	3	Not Evaluated:
RCRA Corrective Action:	0	Medium:	1	Response Complete:
RCRA UST:	0	Low:	0	Total Sites:
Total Sites:	4			4

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	3							
SI	3	1						
RI/FS					1	3		
RD						2	1	
RA								3
IRA					4(4)			
RC								4
Cumulative Response Complete								100%

POINT MUGU NAVAL AIR WEAPONS STATION

POINT MUGU, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVAIRSYSCOM

Size: 4,500 Acres

Funding to Date: \$14,154,000

Estimated Funding to Complete: \$25,760,000

Base Mission: Performs development, test and evaluation, and follow-on engineering, logistic and training support for Naval weapons systems; provides major range and technical support for fleet users

Contaminants: Acid, ash, dredge spoils, hypochlorite, sludge, wastewater, low-level radiation, paint, POLs, pesticides, plating waste, PCBs, refuse with hazardous waste, chemical agents, heavy metals, solvents

Number of Sites:

CERCLA: 11

RCRA Corrective Action: 1

RCRA UST: 10

Total Sites: 22

Relative Risk Ranking of Sites:

High: 13 Not Evaluated: 3

Medium: 3 Response Complete: 2

Low: 1 Total Sites: 22



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	11							
SI	8		2	1				
RI/FS			2	5	1	1		
RD					3	2	2	2
RA						3	2	4
IRA				4(4)	4(6)	1(1)		
RC	1				1	1	2	6
Cumulative Response Complete	9%				18%	27%	45%	100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	1							
RFI		1						
CMS								
DES								
CMI								
IRA								
RC		1						
Cumulative Response Complete		100%						
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	3							
INV	3							
CAP								
DES			6					
IMP			1	2				7
IRA								
RC			1	2				7
Cumulative Response Complete			10%	30%				100%

POINT SUR NAVAL FACILITY

POINT SUR, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVFACENGCOM

Size: 34 Acres

Funding to Date: \$1,862,000

Estimated Funding to Complete: \$100,000

Base Mission: Operates automated data gathering equipment

Contaminants: POLs



Number of Sites:		Relative Risk Ranking of Sites:	
CERCLA:	1	High:	0
RCRA Corrective Action:	1	Medium:	0
RCRA UST:	0	Low:	0
Total Sites:	2	Not Evaluated:	1
		Response Complete:	1
		Total Sites:	2

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI								
RI/FS								
RD								
RA		1						
IRA								
RC		1						
Cumulative Response Complete		100%						
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	1							
RFI								
CMS				1				
DES								
CMI								
IRA			1(1)					
RC				1				
Cumulative Response Complete				100%				

POMONA NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT

POMONA, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVSEASYSOM

Size: 160 Acres

Funding to Date: \$33,000

Estimated Funding to Complete: \$0

Base Mission: Provides development, design, engineering, test, production and depot-level support of tactical, non-nuclear, surface and air launched weapons for the Naval Sea Systems Command

Contaminants: POLs

Number of Sites:

CERCLA: 3

RCRA Corrective Action: 0

RCRA UST: 0

Total Sites: 3

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0

Medium: 0 Response Complete: 3

Low: 0 Total Sites: 3



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	3							
SI	2							
RI/FS								
RD								
RA								
IRA								
RC	3							
Cumulative Response Complete	100%							

PORT HUENEME NAVAL CONSTRUCTION BATTALION CENTER

PORT HUENEME, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVFACENGCOM

Size: 33 Acres

Funding to Date: \$17,452,000

Estimated Funding to Complete: \$50,175,000

Base Mission: Provides support to Naval Construction Force, fleet units, and assigned organizational elements

Contaminants: Heavy metals (copper, lead), PCBs, pesticides, volatile and semi-volatile organic compounds



Number of Sites:

CERCLA: 24
RCRA Corrective Action: 0
RCRA UST: 3
Total Sites: 27

Relative Risk Ranking of Sites:

High: 5 Not Evaluated: 4
Medium: 10 Response Complete: 1
Low: 7 Total Sites: 27

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	22							
SI	3	5	13		1			1
RI/FS			5	2	3	3	1	4
RD				2	2	5	2	6
RA			2			4		15
IRA	1(2)		2(2)	1(1)	9(10)	4(4)		7(7)
RC		1	3			4		16
Cumulative Response Complete		4%	17%			33%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	2	1						
INV		2						
CAP			2	1				
DES					2			
IMP								2
IRA	2(2)	1(1)						2(2)
RC			1					2
Cumulative Response Complete			33%					100%

SALTON SEA TEST RANGE

IMPERIAL COUNTY, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMSPAWARSYSCOM

Size: 19,451 Acres

Funding to Date: \$6,118,000

Estimated Funding to Complete: \$392,000

Base Mission: Served as training facility for U.S. Navy, Army, and Marine Corps; formerly used by the Atomic Energy Commission for the Fat Man/Little Boy Project

Contaminants: Asbestos, depleted uranium, POLs, solvents



Number of Sites:

CERCLA: 24
RCRA Corrective Action: 0
RCRA UST: 1
Total Sites: 25

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 10
Medium: 2 Response Complete: 1
Low: 12 Total Sites: 25

BRAC I

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	24							
SI			23					
RI/FS				22				
RD					22			
RA								22
IRA								
RC	1		1					22
Cumulative Response Complete	4%		8%					100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1							
INV			1					
CAP								
DES								
IMP				1				
IRA								
RC				1				
Cumulative Response Complete				100%				

SAN CLEMENTE ISLAND NAVAL AUXILIARY LANDING FIELD

SAN CLEMENTE ISLAND, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 36,200 Acres

Funding to Date: \$76,000

Estimated Funding to Complete: \$12,803,000

Base Mission: Shore bombardment area for Pacific Fleet operations and training; research, development, testing and evaluation of missiles and missile systems; Navy and Marine training

Contaminants: Ordnance compounds, paint, asbestos, heavy metals, POLs, solvents, chemical agents, explosive chemicals, refuse with hazardous waste, scrap metal

Number of Sites:

CERCLA: 15

RCRA Corrective Action: 0

RCRA UST: 4

Total Sites: 19

Relative Risk Ranking of Sites:

High: 2 Not Evaluated: 2

Medium: 8 Response Complete: 2

Low: 5 Total Sites: 19



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	14							
SI			2		10			
RI/FS					3		5	4
RD						4	3	5
RA						3		9
IRA						3(3)		7(7)
RC	2					3		10
Cumulative Response Complete	13%					33%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	4							
INV			1		1			
CAP						2		
DES				1	1	2		
IMP								4
IRA			1(1)	1(1)				3(3)
RC								4
Cumulative Response Complete								100%

SAN DIEGO FLEET ANTISUBMARINE WARFARE TRAINING CENTER PACIFIC

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CNET

Size: 27 Acres

Funding to Date: \$157,000

Estimated Funding to Complete: \$2,474,000

Base Mission: Provides O&M training for antisubmarine warfare

Contaminants: POLs



Number of Sites:

CERCLA: 1
RCRA Corrective Action: 0
RCRA UST: 2
Total Sites: 3

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0
Medium: 1 Response Complete: 0
Low: 2 Total Sites: 3

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI			1					
RI/FS								
RD								
RA			1					
IRA			1(3)					
RC			1					
Cumulative Response Complete			100%					
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC			2					
INV								
CAP				2				
DES								
IMP								2
IRA	1(1)				1(1)			1(1)
RC								2
Cumulative Response Complete								100%

SAN DIEGO FLEET COMBAT TRAINING CENTER PACIFIC

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CNET

Size: 94 Acres

Funding to Date: \$95,000

Estimated Funding to Complete: \$941,000

Base Mission: Provides specified tactical combat training

Contaminants: Inert material



Number of Sites:		Relative Risk Ranking of Sites:			
CERCLA:	1	High:	0	Not Evaluated:	1
RCRA Corrective Action:	0	Medium:	0	Response Complete:	0
RCRA UST:	0	Low:	0	Total Sites:	1
Total Sites:	1				

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI							1	
RI/FS								1
RD								
RA								
IRA								
RC								1
Cumulative Response Complete								100%

SAN DIEGO FLEET AND INDUSTRIAL SUPPLY CENTER

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVSUPSYSCOM

Size: 219 Acres

Funding to Date: \$1,342,000

Estimated Funding to Complete: \$3,391,000

Base Mission: Provides petroleum products to support military activities in Southern California

Contaminants: Inert material, heavy metals, POLs, sludge



Number of Sites:

CERCLA: 3

RCRA Corrective Action: 0

RCRA UST: 1

Total Sites: 4

Relative Risk Ranking of Sites:

High: 2 Not Evaluated: 1

Medium: 1 Response Complete: 0

Low: 0 Total Sites: 4

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	2							1
SI			1		1			
RI/FS					1			1
RD						1		1
RA						1		1
IRA					1(1)	1(1)		
RC						1		2
Cumulative Response Complete						33%		100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV			1					
CAP								1
DES								1
IMP								1
IRA				1(1)				1(1)
RC								1
Cumulative Response Complete								100%

SAN DIEGO MARINE CORPS RECRUIT DEPOT

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 400 Acres

Funding to Date: \$942,000

Estimated Funding to Complete: \$9,527,000

Base Mission: Provides basic training for Marine Corps recruits

Contaminants: Solvents, POLs



Number of Sites:

CERCLA: 3
RCRA Corrective Action: 0
RCRA UST: 5
Total Sites: 8

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 5
Medium: 0 Response Complete: 1
Low: 2 Total Sites: 8

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	2							
SI			1		2			
RI/FS			1		1			
RD						1		
RA						1		
IRA						2(2)		
RC			1		1	1		
Cumulative Response Complete			33%		67%	100%		
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5							
INV	1	1			2			
CAP			2		1			
DES				2	1			
IMP	1					2		2
IRA	1(1)		1(1)					2(2)
RC	1						1	3
Cumulative Response Complete	20%						40%	100%

SAN DIEGO NAVAL COMMAND CONTROL AND OCEAN SURVEILLANCE CENTER SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMSPARWARSYSCOM

Size: 600 Acres

Funding to Date: \$3,138,000

Estimated Funding to Complete: \$17,054,000

Base Mission: Principal Navy Research, Development, Test and Evaluation (RDT&E) center for command control, communications, ocean surveillance, surface and air launched undersea weapons systems

Contaminants: Non-chlorinated solvents, POLs, acid



Number of Sites:

CERCLA: 10
RCRA Corrective Action: 0
RCRA UST: 2
Total Sites: 12

Relative Risk Ranking of Sites:

High: 6 Not Evaluated: 6
Medium: 0 Response Complete: 0
Low: 0 Total Sites: 12

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	6							3
SI			4		1			2
RI/FS						1	1	3
RD							1	3
RA								4
IRA					1(1)		2(2)	5(5)
RC								10
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC							1	
INV			1		1			
CAP								2
DES								2
IMP								2
IRA					1(3)		1(2)	1(1)
RC								2
Cumulative Response Complete								100%

SAN DIEGO NAVAL IN-SERVICE ENGINEERING WEST

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMSPAWARSCOM

Size: 82 Acres

Funding to Date: \$50,000

Estimated Funding to Complete: \$1,638,000

Base Mission: Communication and electronic systems support to Fleet

Contaminants: Volatile and semi-volatile organic compounds, heavy metals (lead, thallium carbonate), PCBs, POIs



Number of Sites:

CERCLA: 3
RCRA Corrective Action: 0
RCRA UST: 0
Total Sites: 3

Relative Risk Ranking of Sites:

High: 2 Not Evaluated: 1
Medium: 0 Response Complete: 0
Low: 0 Total Sites: 3

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1	1	1					
SI				2			1	
RI/FS								2
RD								2
RA								2
IRA				1(1)	1(1)			1(1)
RC							1	2
Cumulative Response Complete							33%	100%

SAN DIEGO NAVAL COMPUTER AND TELECOMMUNICATIONS STATION

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVCOMTELCOM

Size: 550 Acres

Funding to Date: \$1,651,000

Estimated Funding to Complete: \$1,888,000

Base Mission: Manages, operates and maintains facilities of the Defense Communication System

Contaminants: Heating oil, fuel, gasoline, diesel (petroleum constituents)



Number of Sites:

CERCLA: 1
RCRA Corrective Action: 0
RCRA UST: 1
Total Sites: 2

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0
Medium: 0 Response Complete: 1
Low: 1 Total Sites: 2

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI								
RI/FS								
RD								
RA								
IRA								
RC	1							
Cumulative Response Complete	100%							
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1							
INV								
CAP								1
DES								1
IMP								1
IRA								1(1)
RC								1
Cumulative Response Complete								100%

SAN DIEGO NAVAL MEDICAL CENTER

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: BUMED

Size: 86 Acres

Funding to Date: \$50,000

Estimated Funding to Complete: \$0

Base Mission: Provides general and specialized hospital and cleanup services

Contaminants: POLs



Number of Sites:		Relative Risk Ranking of Sites:	
CERCLA:	1	High:	0
RCRA Corrective Action:	0	Medium:	0
RCRA UST:	0	Low:	0
Total Sites:	1	Not Evaluated:	0
		Response Complete:	1
		Total Sites:	1

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI								
RI/FS								
RD								
RA								
IRA								
RC	1							
Cumulative Response Complete	100%							

SAN DIEGO NAVAL STATION

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 1,127 Acres

Funding to Date: \$17,095,000

Estimated Funding to Complete: \$72,520,000

Base Mission: Provides logistical and personnel support to 25 major tenant commands, provides berthing and port services for ships, provides shore based training and shore activities for all ship crews

Contaminants: PCBs, POLs, heavy metals, unexposed ordnance, solvents, plating waste, blasting grit, electrolyte, asbestos, POL sludge, paint, pesticides

Number of Sites:

CERCLA: 14

RCRA Corrective Action: 7

RCRA UST: 1

Total Sites: 22

Relative Risk Ranking of Sites:

High: 10 Not Evaluated: 3

Medium: 4 Response Complete: 2

Low: 3 Total Sites: 22



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	12							
SI	7		4		1			
RI/FS							3	2
RD							1	4
RA		1	1					10
IRA	1(1)	1(1)	4(5)	1(2)	3(3)	1(1)	3(3)	7(7)
RC	1	1	2					10
Cumulative Response Complete	7%	14%	29%					100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	7							
RFI			5					
CMS			1	2				1
DES								1
CMI					1			4
IRA					1(2)			3(6)
RC				2	1			4
Cumulative Response Complete				29%	43%			100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV								
CAP								
DES								
IMP			1					
IRA			1(1)					
RC			1					
Cumulative Response Complete			100%					

SAN DIEGO NAVAL SUBMARINE BASE

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 300 Acres

Funding to Date: \$702,000

Estimated Funding to Complete: \$8,863,000

Base Mission: Operates shore facilities in support of the submarine force, U.S. Pacific Fleet and is home port for two submarine squadrons

Contaminants: Propellant, inert material, POLs, PCBs, non-chlorinated solvents, refuse

Number of Sites:

CERCLA: 5

RCRA Corrective Action: 0

RCRA UST: 4

Total Sites: 9

Relative Risk Ranking of Sites:

High: 1 Not Evaluated: 7

Medium: 0 Response Complete: 0

Low: 1 Total Sites: 9



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	5							
SI			2					3
RI/FS						1		1
RD							1	
RA							1	
IRA			1(2)					
RC							1	4
Cumulative Response Complete							20%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC			4					
INV					1			3
CAP								1
DES								1
IMP								1
IRA							1(2)	1(1)
RC								4
Cumulative Response Complete								100%

SAN DIEGO NAVAL TRAINING CENTER

SAN DIEGO, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CNET

Size: 552 Acres

Funding to Date: \$4,628,000

Estimated Funding to Complete: \$27,272,000

Base Mission: Provides recruit training for enlisted personnel and primary, advanced, and specialized training for officers and enlisted personnel

Contaminants: Paint, pesticides, solvents, unexploded ordnance, POLs



Number of Sites:

CERCLA: 6
RCRA Corrective Action: 0
RCRA UST: 7
Total Sites: 13

Relative Risk Ranking of Sites:

High: 1 Not Evaluated: 7
Medium: 2 Response Complete: 1
Low: 2 Total Sites: 13

BRAC III

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1	3	2					
SI	1		2		1			
RI/FS			1		2			
RD				1	1			
RA					2	1		
IRA								
RC		1	1		2	2		
Cumulative Response Complete		17%	33%		67%	100%		
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	4							
INV	2		4					
CAP			1					
DES		2	1					
IMP			1	4	1			
IRA			1(1)		1(1)			
RC			2	3	2			
Cumulative Response Complete			29%	71%	100%			

SAN NICOLAS ISLAND OUTLYING LANDING FIELD

SAN NICOLAS ISLAND, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVAIRSYSCOM

Size: 13,370 Acres

Funding to Date: \$3,732,000

Estimated Funding to Complete: \$2,412,000

Base Mission: Serves as launch platform for short and medium range missile testing, and observation for missile testing and diverse test and research functions

Contaminants: Unexploded ordnance, solvents, POLs, PCBs, paint, pesticides, scrap metal



Number of Sites:

CERCLA: 6
RCRA Corrective Action: 0
RCRA UST: 6
Total Sites: 12

Relative Risk Ranking of Sites:

High: 2 Not Evaluated: 1
Medium: 0 Response Complete: 0
Low: 9 Total Sites: 12

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	6							
SI			5					1
RI/FS				4	1			
RD					1		1	2
RA							2	3
IRA				5(8)			2(2)	3(3)
RC							2	4
Cumulative Response Complete							33%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5							
INV	5							
CAP								
DES								
IMP			6					
IRA			6(6)					
RC			6					
Cumulative Response Complete			100%					

SEAL BEACH NAVAL WEAPONS STATION

SEAL BEACH, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: COMNAVSEASYSOM

Size: 5,000 Acres

Funding to Date: \$16,318,000

Estimated Funding to Complete: \$68,115,000

Base Mission: Receives, stores, maintains and issues conventional ammunition and surface and air launched guided missiles; maintains and operates ordnance systems component rework facility; distributes, maintains, stores and issues materials

Contaminants: Ammonium, picrate, heavy metals (chromium, lead), POLs

Number of Sites:

CERCLA: 46

RCRA Corrective Action: 21

RCRA UST: 9

Total Sites: 76

Relative Risk Ranking of Sites:

High: 14

Medium: 8

Low: 20

Not Evaluated: 29

Response Complete: 5

Total Sites: 76



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	44	1						
SI	4	12	3	12	8	1		2
RI/FS			3	1	5	2		25
RD				1	1	4	3	18
RA				1	1	4	4	18
IRA		1(1)		9(12)	8(10)	8(9)	4(4)	12(12)
RC	3			1	1	6	4	31
Cumulative Response Complete	7%			9%	11%	24%	33%	100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA	21							
RFI		20	1					
CMS							1	20
DES								3
CMI								3
IRA			1(1)		1(1)			2(2)
RC								21
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5	1						
INV	1	1		1				
CAP	1		2	1	1			1
DES					1			
IMP	1					1	1	4
IRA	3(3)	2(2)		2(3)	1(1)	2(2)	1(1)	5(5)
RC	2						1	6
Cumulative Response Complete	22%						33%	100%

SKAGGS ISLAND NAVAL SECURITY GROUP ACTIVITY

SKAGGS ISLAND, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVSECGRU

Size: 3,340 Acres

Funding to Date: \$153,000

Estimated Funding to Complete: \$13,153,000

Base Mission: Provides receiving facilities for point-to-point, ship to shore, local harbor and inter/intra-district communicators; provides high frequency direction finding for use in search and rescue operations and provides communications support

Contaminants: Dredge spoils, POLs, paint, heavy metals

Number of Sites:

CERCLA: 6

RCRA Corrective Action: 1

RCRA UST: 4

Total Sites: 11

Relative Risk Ranking of Sites:

High: 3

Medium: 5

Low: 2

Not Evaluated: 1

Response Complete: 0

Total Sites: 11



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	5							
SI		3	3					
RI/FS			1		2	3		
RD				1	1	3	1	
RA					1	2	3	
IRA			2(2)	1(1)				
RC					1	1	2	2
Cumulative Response Complete					17%	33%	67%	100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA								
RFI		1						
CMS						1		
DES								1
CMI								1
IRA			1(1)					
RC								1
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	2							
INV								
CAP		2	1					
DES			3					
IMP				3	1			
IRA				1(1)				
RC				1				3
Cumulative Response Complete				25%				100%

STOCKTON NAVAL COMMUNICATION STATION

STOCKTON, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: COMNAVCOMTELCOM

Size: 2,788 Acres

Funding to Date: \$12,545,000

Estimated Funding to Complete: \$135,515,000

Base Mission: Manages, operates and maintains facilities, equipment and devices necessary to provide communications for the Command

Contaminants: Acid, blasting grit, industrial wastewater, pesticides, POLs, PCBs



Number of Sites:

CERCLA: 71
RCRA Corrective Action: 0
RCRA UST: 1
Total Sites: 72

Relative Risk Ranking of Sites:

High: 44 Not Evaluated: 18
Medium: 5 Response Complete: 0
Low: 5 Total Sites: 72

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	60	1						
SI	1	18	16	35	1			
RI/FS					1	43	10	17
RD							31	39
RA								70
IRA	6(12)		1(1)	11(14)	6(7)			
RC								71
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV								
CAP			1					
DES				1				
IMP					1			
IRA								
RC								1
Cumulative Response Complete								100%

SUNNYVALE NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT

SUNNYVALE, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: SSP

Size: 160 Acres

Funding to Date: \$147,000

Estimated Funding to Complete: \$0

Base Mission: Government Owned-Contractor Operated (GOCO) facility operated by Lockheed Missiles and Space Company, Inc.; manufactures Naval Fleet Ballistic Missiles and provides assembly and testing of components

Contaminants: Heavy metals (chromium, silver), volatile organic compounds, POLs, PCBs

Number of Sites:

CERCLA: 16

RCRA Corrective Action: 0

RCRA UST: 0

Total Sites: 16

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0

Medium: 0 Response Complete: 16

Low: 0 Total Sites: 16



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	16							
SI	16							
RI/FS	5							
RD								
RA								
IRA								
RC	16							
Cumulative Response Complete	100%							

TREASURE ISLAND NAVAL STATION

TREASURE ISLAND, CALIFORNIA

Engineering Field Division/Activity:	EFAWEST
Major Claimant:	CINCPACFLT
Size:	717 Acres
Funding to Date:	\$23,397,000
Estimated Funding to Complete:	\$89,283,000
Base Mission:	Provides services and materials in support of operating forces and designated shore activities
Contaminants:	Acetone, acids, benzene, heavy metals, pesticides, PCBs



Number of Sites:		Relative Risk Ranking of Sites:		
CERCLA:	28	High:	14	Not Evaluated: 3
RCRA Corrective Action:	0	Medium:	5	Response Complete: 3
RCRA UST:	3	Low:	6	Total Sites: 31
Total Sites:	31			

BRAC III

EXECUTIVE SUMMARY

The Naval Station Treasure Island (NAVSTA TI) is an island in the middle of the San Francisco Bay, midway between San Francisco and Oakland, California. The facility consists of two contiguous islands: the north island is named Treasure Island (TI) and the south island is named Yerba Buena Island (YBI). The sites of major concern at NAVSTA TI are Sites 6, 11, 14 and 22 which have soil and groundwater that are contaminated with petroleum products due to fuel storage and fire training activities. IR Site 11 is a former small landfill with multiple contaminants including petroleum products, volatile organic compounds, and metals. With few exceptions, contamination at most of the IR sites is the result of petroleum products originating from fueling operations. Two sites have chlorinated solvent contaminated groundwater. Numerous storage tanks and underground fuel lines exist, many of which have been gradually abandoned since the 1950s. The Navy has since changed its operational processes to prevent further contamination. NAVSTA TI is under a Federal Facilities Site Remediation Agreement (FFSRA) with the California Environmental Protection Agency, Department of Toxic Substances (DTSC) and the Regional Water Quality Control Board (RWQCB) which was signed on September 9, 1992.

NAVSTA TI is surrounded by the waters of San Francisco Bay. Potential receptors of soluble contamination would include flora and fauna using or inhabiting the surrounding waters. Currently, habitat for endangered or sensitive species on NAVSTA TI is very limited, although some have been observed at or near NAVSTA TI. There is limited potential for human contact with or consumption of groundwater since drinking water wells are not used on NAVSTA TI.

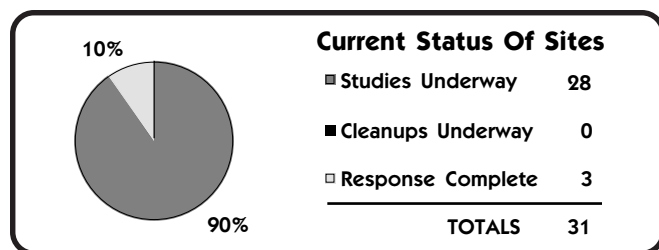
A Restoration Advisory Board (RAB) was formed in December 1993 and has 29 community members including environmental groups and individual community members, excluding regulators and Navy personnel. The RAB provides community advice on issues related to base closure and environmental restoration. A Community Relations Plan has been written and two public information repositories have been established.

Since the beginning of the Installation Restoration Program (IRP) at NAVSTA TI, a total of eight IR sites have been identified. Field work for a Phase II Remedial Investigation (RI) study began in FY95 to further characterize the extent of contamination and to collect data necessary for evaluation of remedial alternatives. The Phase II RI is being conducted in two steps. The Phase IIA RI is focusing on existing groundwater monitoring and tidal influence study, while the Phase IIB RI is focusing on further characterization and contaminant delineation. Two removal actions have been initiated in FY95. At Site 6 (Fire Training Area) floating product removal by bailer and skimmer pump is ongoing. At Site 1 (Medical Clinic) contaminated soil was removed. There are three Underground Storage Tank (UST) sites in the IR program, all in a study phase.

The Phase II RI fieldwork will continue during FY96. A basewide interim groundwater monitoring plan for existing and new monitoring wells will be prepared in FY96 and implemented in FY97 and FY98. Phase II Ecological Risk Assessment (EA) work for terrestrial (onshore) sites and offshore Site 27 (Clipper Cove Skeet Range) will be initiated and completed in FY96. Phase II EA work for Site 13 (Stormwater outfalls) will be initiated in FY97. Also in FY96, an Engineering Evaluation/Cost Analysis (EE/CA) will be prepared for interim removal actions for floating product and contaminated soil at Site 6 (Fire Training Area), contaminated soil at Site 14 (New Fuel Farm), and contaminated soil at Site 22 (Navy Exchange Service Station). A Corrective Action Plan (CAP) for petroleum only sites is being considered which will incorporate a treatability study and design of a bioremediation system.

Immunoassay field tests, a rapid field screening technique, were used extensively at NAVSTA TI to guide the Phase IIB RI. Immunoassays allow more data to be reported faster and for less money than does the use of an analytical laboratory for analyses. Since results were immediately available, additional sampling locations were quickly identified and the field investigation accelerated. By field screening 80 percent of all samples, approximately \$1 million in analytical costs was avoided.

The Base Realignment and Closure (BRAC) Commission recommended NAVSTA TI for closure. Operational closure of NAVSTA TI is scheduled for September 1997. The Navy plans to transfer property throughout the closure process as it becomes suitable for lease or transfer. At this time, no leases or transfers of property have occurred. However, two buildings have been licensed to the city of San Francisco for use as film studios. In addition, the Department of Labor will be operating a Jobs Corps Training Center at NAVSTA TI.



TREASURE ISLAND NS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - TI and YBI are surrounded by the waters of San Francisco Bay. TI is a man-made island composed of dredged materials consisting of poorly graded fine sand placed over Yerba Buena Shoals. Groundwater at TI is generally encountered at 30-72 inches below ground surface. Because of the presence of relatively impermeable silt and clay lenses, there may be some perched conditions above the shallow water table. The direction of flow for both groundwater and surface runoff at TI is towards the Bay. Soluble contaminants would tend to migrate vertically through the sand to the water table or migrate overland in surface runoff. Less soluble contaminants may tend to bind with the soils and become relatively immobile.

YBI is a natural rock island with minimal soil cover. Surface soils are sandy loam to gravelly loam and subsoils are gravelly loam to sandy clay loam. Bedrock on YBI consists of sandstone and shale. Although there is limited information concerning groundwater at YBI, the groundwater in similar sites in the San Francisco Bay area is commonly present in sandstone or fractured shale due to infiltration. In the filled areas at YBI on the eastern side, soluble contaminants would potentially migrate to the Bay waters. At other areas on the Island, the surface runoff would either transport potential contaminants to the Bay or runoff would infiltrate into the Franciscan sandstone and shale. Less soluble contaminants would tend to bind with the soils and bedrock becoming relatively immobile or leaching small quantities to the surface runoff and ground water.

Drinking water wells are not used on TI or YBI. Subsurface water at TI and YBI proves im potable due to contact with the saline to brackish Bay waters. Water used by the facilities is conveyed by pipeline from San Francisco or Emeryville via the Bay Bridge.



NATURAL RESOURCES - TI consists of approximately 445 acres of developed flat terrain, covered mainly by buildings, roads, and parking lots. Most of the vegetation has been cultivated in landscaped areas. Any undeveloped habitat on NAVSTA TI is found on YBI, where eucalyptus woodlands represent the largest habitat. Brushland, mixed woodland, and grassland are also present on YBI.

The Bay Area supports a variety of fish, birds and mammals. The fishery resource includes anadromous fish which migrate through the Bay to spawn; native fish that remain in the area for life and shellfish such as crab and shrimp. The Bay is a seasonal home for many migrating birds since the San Francisco Estuary is a stopping point along the Pacific Flyway. Migratory birds observed at or near NAVSTA TI include several species of harvested waterfowl and passerine birds. The California sea lion and harbor seal are routinely seen in the San Francisco Bay waters at NAVSTA TI. A small group of harbor seals has been reported to frequent the southwestern and western shorelines of YBI during the winter. A survey of both Federal and California endangered or threatened species observed at or near NAVSTA TI included 7 animals and 17 plant species.

The only rare or sensitive habitat that may be present at NAVSTA TI are the mudflats, which may be located on the western side of the cove between TI and YBI; and threatened and endangered species habitats.



RISK - Both a draft Baseline Human Health Risk Assessment and a draft Ecological Risk Assessment were prepared in conjunction with the draft Phase I Remedial Investigation Report. Based on the results of the risk assessments, site characterization, and discussions with the regulatory agencies, the Navy is proceeding with no action at Site 3 and no further action after minimal soil removal at Site 1. Several sites, including Sites 27, 28 and 29 were recommended for further investigation during the Phase II Remedial Investigation and Ecological Risk Assessment field work. The Phase II Ecological Risk Assessment is currently ongoing at NAVSTA TI to assess risks to terrestrial and aquatic receptors.

For the DOD Relative Risk Ranking System, 14 IR sites were ranked as high relative risk. The high rankings are primarily due to known contamination on the site and the migration potential to ecological receptors present in the Bay or YBI, or exposure of on-site personnel through direct contact with both the soil and the near surface ground water. The groundwater is likely to be connected to the San Francisco Bay. A tidal influence study was completed in FY 95.

REGULATORY ISSUES



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement between the Navy, the Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board (RWQCB) was signed on September 9, 1992. Under this agreement, the Navy agreed to undertake, seek adequate funding for, implement, and report on specified tasks associated with environmental assessment and response actions for 22 sites under the IRP in accordance with CERCLA. The schedule in the Federal Facility Site Remediation Agreement has been modified to be consistent with the comprehensive strategy in the BRAC CLEANUP Plan (BCP) and includes three newly identified installation restoration sites and offshore operable unit (Sites 27 and 28). Therefore, a total of 25 installation restoration sites will be investigated. NAVSTA TI is not on the National Priorities List.



PARTNERING - The BRAC Cleanup Team (BCT) includes a member from each of the Navy, the U. S. EPA Region IX, and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The BCT has worked closely with the Remedial Project Manager (RPM) to expedite the RI process at NAVSTA TI.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC) was formed to provide public involvement in the Installation Restoration Program (IRP) decision-making process. At the December 1993 meeting, the TRC was expanded into a Restoration Advisory Board (RAB) which represents the interests of a broader and more diverse cross-section of the community. The RAB has 29 community members including environmental groups and individual community members. The RAB meetings serve as a forum for the Navy, regulatory agencies, and the community to discuss issues related to base closure, environmental restoration programs, real estate transfer, and decision-making. Meetings are held monthly, with special meetings scheduled to facilitate comments on documents that RAB members are reviewing. Community RAB members also meet monthly, without the regulatory agencies and the Navy, to discuss topics and agenda for the next full RAB meeting.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) for the NAVSTA TI IRP was finalized April 23, 1992. The CRP will be revised to reflect the community relations requirement under BRAC. A mailing list of all interested parties in the community is maintained by the Navy and updated periodically. Fact sheets describing the status of the IRP activities are distributed to the mailing list and informal meetings are held frequently for the general public. The California Department of Toxic Substances and Control (DTSC) and the Navy held a Federal Facility Workshop in October 1994 at Treasure Island.



INFORMATION REPOSITORY - A public repository for information has been established at NAVSTA TI. A second repository has been established at the Public Library (main branch) in San Francisco. These repositories contain information relative to environmental activities at NAVSTA TI. A copy of the Administrative Record documents are contained in the Information Repository. An Administrative Record file has also been established at EFA WEST in accordance with CERCLA requirements.

TREASURE ISLAND NS

BASE REALIGNMENT AND CLOSURE



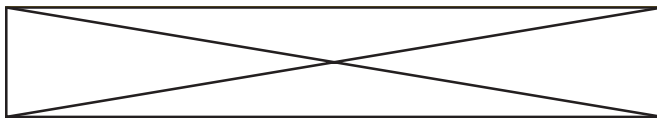
BRAC - In July 1993, the BRAC Commission recommended closure of NAVSTA TI and relocation of the Naval Reserve Center to Alameda, California, and the Naval Technical Training Center to Great Lakes, Illinois, and Little Creek, Virginia. Closure is scheduled for September 1997. The Navy plans a gradual drawdown of personnel and activities prior to the actual closure date. The Navy plans to transfer property throughout the closure process as it becomes suitable for lease or transfer. The community reuse plan and Environmental Baseline Survey will be necessary for the efficient transfer of property.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was established in early FY94 and has presented community workshops on CERCLA and the cleanup process. The BCT works closely with the project team to expedite cleanup and to implement cost saving measures. The BCT includes the BRAC Environmental Coordinator, representatives of the EPA Region IX, and the California Environmental Protection Agency's Department of Toxic Substances Control.



DOCUMENTS - The BRAC Cleanup Plan was finalized in March 1995. The draft Environmental Baseline Survey (EBS) was completed in FY94, and then finalized in FY95. The Environmental Baseline Survey placed all parcels in environmental condition of property categories 1, 2, 6, and 7. Nine parcels will be designated as Community Environmental Response Facilitation Act (CERFA) clean. The Phase II Ecological Risk Assessment Work Plan that began in FY94 continues. For the Feasibility Study, bioremediation of soil and oxidation of groundwater was recommended as the most appropriate treatment technology. A standard format No Action Decision Document is being developed to save time writing and reviewing documents for No Action sites.



LEASE/TRANSFER - The Navy intends to make NAVSTA TI property available for interim use and to transfer NAVSTA TI property as it becomes available and when requested by the city of San Francisco. Parcels may be identified for transfer based upon a Finding of Suitability to Lease (FOSL) or a Finding of Suitability to Transfer (FOST). These mechanisms will be developed and incorporated as the NAVSTA TI closure continues. FOSLs have been completed for building 2, building 180, and the elementary school, which are licensed to the city of San Francisco. The city of San Francisco has sublicensed the buildings to film companies. Currently, a FOSL is being prepared for building 3.



REUSE - The community reuse plan is being developed, and is scheduled for completion in one year. The city of San Francisco, with the assistance of the citizens' reuse committee for NAVSTA TI, plans to issue a draft reuse plan by mid 1996. At this time, no leases or transfers of property have occurred. However, two buildings have been licensed to the city of San Francisco for use as film studios. In addition, the Department of Labor will be operating a Jobs Corps Training Center at NAVSTA TI (FOST is currently being prepared).



FAST-TRACK INITIATIVES - Early actions are an important component of the Installation Restoration Project (IRP) at NAVSTA TI. Based on the results of the draft Phase I Remedial Investigation and discussions with the regulatory agency representatives, four IR sites are currently targeted for removal actions, while additional early actions are being considered at 14 sites. Several other IR sites have been identified that may have the potential to accelerate removal actions or interim remedial actions.

HISTORICAL PROGRESS

FY86

Site 14 - Test Underground Gasoline Spill, Report #1, completed in April as part of the Site Inspection (SI).

FY87

Site 6 - Initial Hazardous Material Investigation, Report #2, completed in August and Investigation of Potential Soil and Groundwater Contamination of Tank 2, Report #3 completed in July as part of SI.

Site 20 - Geotechnical Engineering Study, Proposed Family Housing Project, Report #4, was completed as part of SI.

FY88

Sites 1-26 - Preliminary Assessment/Site Inspection (PA/SI), Report #5, completed in April.

Sites 1, 3-7, 9-17, 19-22 and 24-26 - PA/SI recommended further action.

Sites 2, 8, 18, 23 - No further action recommended in PA/SI.

Sites 8, 19, 25 - The State of California reviewed PA/SI and recommended further investigation for these sites. The additional SI was completed in April and an Remedial Investigation/Feasibility Study (RI/FS) was recommended for all three sites.

FY89

Site 20 - SI Report, Former Tank 225A, Report #6, completed in November. USTs - Five Underground Storage Tanks (USTs) removed.

FY90

Site 11 - UST Removal, Tank 270, Report #7, completed July as part of SI. USTs - Two USTs removed.

FY91

Sites 8, 19 and 25 - SI Report, Report #8, was completed April and recommended an RI/FS for all three.

Site 20 - Soil Aeration Field Work Plan, Status on Aeration Project, and Bioremediation Treatment Letter Report, Report #9, completed February and October 1991, and February 1992, respectively, as part of Interim Remedial Action (IRA).

FY92

Federal Facility Site Remediation Agreement (FFSRA) signed by Department of the Navy and the State of California in September.

Site 12 - Preliminary Risk Assessment Report, Report #10, completed September as part of SI.

Sites 6, 14 - Suitability Study for Floating Product Removal, Report #11, completed February as part of IRA.

Site 6 - Hazardous Waste Testing Old Fire Fighting Training School, Report #12, completed April as part of SI.

USTs - Twenty-three USTs removed.

FY93

Sites 13, 13A - Stormwater Pollution Prevention Plan, Report #13, completed in June 1993 as part of PA.

Site 29 - Soil and Air Testing, Report #17, completed June and September as part of PA.

FY94

Sites 1, 3, 4-17, 19-22, 24 and 25 - Draft Phase I RI Report, Report #14, completed in November.

TREASURE ISLAND NS

Sites 1, 3, 4-12, 14-17, 19-22, 24 and 25 - Draft Baseline Human Health Risk Assessment, Report #15, completed November.

Sites 1, 3, 4-17, 19-22, 24 and 25 - Draft Ecological Risk Assessment, Report #16, completed November.

Sites 1, 3, 4-12, 14-17, 19-22, 24 and 25 - Draft Initial Screening of Technologies, Report #18, as part of FS.

Site 14 - Characterization Wells Letter, Report #19, completed January as part of IRA.

Sites 6, 22 and 25 - Draft Summary Report of UST Removals, Report #20, completed January 1994 as part of IRA.

USTs - Five USTs removed.

PROGRESS DURING FISCAL YEAR 1995

FY95

ALL SITES - Field work began for Phase II RI on most sites. Groundwater sampling for all existing wells was completed.

Site 1 - Contaminated soil was removed by hand due to site constraints.

Site 6 - Floating product removal by bailer and skimmer pump was initiated and ongoing.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

ALL SITES - The Phase II RI field work will continue. Groundwater sampling of the new monitoring wells will be completed. A basewide interim groundwater monitoring plan for existing and new monitoring wells will be prepared in FY96 and implemented in FY97 and FY98. After completion of the Phase II RI, the draft RI will be prepared in FY96 and then finalized in FY97. Phase II Ecological Risk Assessment work will be initiated for terrestrial (onshore) sites and Site 27 (offshore) in FY96.

Site 6, 14 and 22 - Anticipate completing bioremediation treatability study.

FY97

ALL SITES - Basewide interim groundwater monitoring program will be implemented. The FS Report will be completed.

Site 13 - Phase II Ecological Risk Assessment work will be initiated.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	25							
SI	25							
RI/FS			1	24				
RD						23		
RA								23
IRA		1(1)		3(3)				
RC	3		1		1			23
Cumulative Response Complete	11%		14%		18%			100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	1		2					
INV					1			
CAP			1	1		1		
DES				1	1		1	
IMP					1		1	1
IRA	2(2)					1(1)		
RC					1			2
Cumulative Response Complete					33%			100%

TREASURE ISLAND NAVAL STATION HUNTERS POINT ANNEX

SAN FRANCISCO, CALIFORNIA

Engineering Field Division/Activity: EFAWEST

Major Claimant: CINCPACFLT

Size: 936 Acres (493 Acres on Land/443 Submerged)

Funding to Date: \$44,458,000

Estimated Funding to Complete: \$427,237,000

Base Mission: Originally modified, maintained and repaired ships until 1974; was leased to Tripple A Machine Shop, Inc. from 1976 to 1986 for commercial ship repair; Department of the Navy regained possession of property in 1987; currently inactive

Contaminants: Heavy metals, PCBs, POLs, volatile and semi-volatile organic compounds

Number of Sites:

CERCLA: 58
RCRA Corrective Action: 0
RCRA UST: 5
Total Sites: 63

Relative Risk Ranking of Sites:

High: 22
Medium: 28
Low: 4
Not Evaluated: 4
Response Complete: 5
Total Sites: 63



NPL

BRAC II

EXECUTIVE SUMMARY

Treasure Island Naval Station Hunters Point Annex (NSTI Hunters Point) is in the southeast portion of San Francisco County, California. It is a deactivated Navy shipyard that was selected and approved for closure and disposition by the Base Realignment and Closure (BRAC) Commission in 1991. It is currently under caretaker status by the Naval Facilities Engineering Command's Engineering Field Activity West located in San Bruno, California. Portions of NSTI Hunters Point have already been leased to private parties. Because of the presence of hazardous materials resulting from past shipyard operations and the operations of a commercial machine shop that had leased NSTI Hunters Point from 1976 to 1986, the EPA placed the installation on the NPL in 1989. Site types include landfills and land disposal areas. The Navy Radiological Defense Laboratory (NRDL) used multiple buildings at Hunters Point Annex. The Atomic Energy Commission determined the buildings were clean although the State of California requested additional sampling. Low level radiation was found outside some of the NRDL buildings and continues to be investigated.

NSTI Hunters Point is currently under a Federal Facility Agreement (FFA) that was signed by the Navy, the EPA, and the California Environmental Protection Agency (Cal/EPA) in 1992.

NSTI Hunters Point is on a long promontory in the southeastern portion of San Francisco, extending eastward into San Francisco Bay. The facility is bounded on the north and east by the bay, and on the south and west by the Bayview/Hunters Point district of San Francisco. Between 70 and 80 percent of NSTI Hunters Point is relatively flat lowlands constructed by placing fill materials along the bay margin. The remaining land is on a moderately to steeply sloping ridge. Most of the lowlands are covered by asphalt paving and structures. The open areas are either sparsely vegetated or bare soil. Potential contaminant migration pathways exist via both surface runoff and infiltration of the rain water. Stormwater runoff is channeled to discharge in San Francisco Bay. Stormwater percolating into the soils has the potential to migrate via the groundwater to the San Francisco Bay where both human and ecological receptors are present.

The Technical Review Committee was converted to a Restoration Advisory Board (RAB) in FY94 and has 32 members from the community, local business, and regulatory agencies. An Information Repository was established at two local libraries.

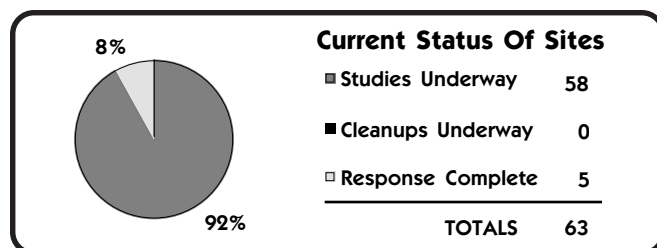
At the end of FY95, preliminary study phases have been completed for all sites, and the Remedial Investigation (RI) phase is underway at 58 sites. Five sites are Response Complete.

Early removal actions include a removal action at Site 8 to remove soil contaminated with the chemical additive PCB in FY90, and tank removals in FY91 and FY92 at several UST sites. At Sites 2 and 6 in FY92, soil contaminated with heavy metals and PCB was removed. Contaminated sludge and a large tank were removed at Site 2 in FY93. Also in FY93 at Site 6 several tanks and underground piping were removed and a clay and gravel cap was placed over the site.

In FY95, removal began of equipment, sunken baths, above ground structures, foundations, and soil contaminated with zinc and chromate at Site 9, The Pickling and Plate Yard. Removal actions planned in FY96 at Parcels B, C, D and E include groundwater pump and treat for a plume, soil removal at storm drains and exploratory excavation.

In FY92, the installation successfully demonstrated an innovative technology for recycling sand blasting grit containing low levels of copper and lead from ship cleaning operations. A full scale demonstration using the grit was completed in FY93. The Navy can use this technology at other installations.

In 1991, NSTI Hunters Point was included in the Base Realignment and Closure (BRAC) Program. A revised approach to investigation and remediating sites was implemented at this time. Sites were divided into geographic areas, Parcels A-F, to facilitate investigation and remediation. The intent is to sell the land, parcel by parcel, as various parcels are remediated. The concerns of the local community are primarily economic reuse of the facility, and increasing the economic potential of the community. The community has experienced 20 to 30% unemployment since the base was placed in industrial reserve in 1974. Operational base closure was 1 April 1994. The Navy is making local small and disadvantaged business aware of subcontracting opportunities, encouraging mentor and protégé arrangements under large business contracts, and conducting aggressive outreach programs.



TREASURE ISLAND NS HUNTERS POINT ANNEX RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - There are three aquifers under NSTI Hunters Point. The groundwater is not used for any purpose, and no irrigation or water supply wells are located at NSTI Hunters Point. The nearest public water supply well is about 2.5 miles inland from the base. A commercial bottled-water company, Albion Mountain Spring, is located within 2,300 feet of the facility. Albion Mountain Spring extracts groundwater for commercial sale to the public. However, the groundwater extracted and used by Albion appears to be separate and distinct from the groundwater beneath NSTI Hunters Point. It is unlikely that any contamination found in NSTI Hunters Point groundwater would impact Albion's bottled water supply. Surface water drainage is primarily through sheet-flow runoff. The runoff is collected by an on-site storm drain system that is discharged through several outfalls into San Francisco Bay. No naturally occurring channeled drainage exists; any pre-existing drainage channels have been filled or modified by construction over the years.



NATURAL RESOURCES - Terrestrial and aquatic ecosystems are present at NSTI Hunters Point. Although most of NSTI Hunters Point is covered with asphalt, buildings, or other structures, vegetated areas supporting the terrestrial fauna exist. These are areas of disturbed landscape, nonnative grassland, and salt marsh. All four habitats are somewhat disturbed as a result of past or current activities. The aquatic system consists of wetland, pelagic intertidal, and subtidal habitats that are contiguous with San Francisco Bay. Threatened or endangered species that have been observed at NSTI Hunters Point include chinook salmon, longfin smelt, peregrine falcon, loggerhead shrike, and California brown pelican.



RISK - A three-phased Ecological Risk Assessment (ERA) to determine any potential adverse effects on the biota in the area was completed in August 1994. The first phase involved the review of existing documentation, performing bioassays and field surveys, and identifying biota. The Ecological Sampling and Analysis Plan is complete and field work began in late FY93. A separate schedule has been established for the investigation of potential impacts from radiation generated from radium dials disposed at Site 1 (Industrial Landfill). Using the DOD Relative Risk Ranking System, 22 sites were ranked high, 28 were ranked medium, and 4 were ranked low risk. Four other sites will be ranked when enough data is available for ranking. The high relative risk sites were so ranked primarily because of the potential for contaminants to migrate through the groundwater pathway to the San Francisco Bay where both human and ecological receptors are present. Some sites were ranked high based on contamination present in the soil and the potential for workers on site or recreational users to be exposed to the contaminants. Seven removal actions have either been completed or are underway at the high ranked sites. The Agency for Toxic Substances and Disease Registry (ATSDR) performed a Public Health Assessment in FY94. Concerns were raised about restricting access to sites and subsistence fishing offshore of NSTI Hunters Point.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - NSTI Hunters Point was included on the National Priorities List in November 1989 based on a Hazard Ranking System Score of 48.77. The presence of hazardous materials resulting from past shipyard operations and the operations of a private company who had leased NSTI Hunters Point from 1976 to 1986, contributed to the NPL classification.



LEGAL AGREEMENTS - A Federal Facility Agreement was signed in 1990. A revised agreement was signed by the California Department of Toxic Substances Control, the California Regional Water Quality Control Board (San Francisco Bay Region), and by the Department of the Navy in 1991. It was also signed by the EPA Region IX in 1992. The agreement defines work schedules and

required deliverables for each operable unit. The FFA schedule was renegotiated in June 1995.



PARTNERING - While there are no formal partnering agreements, the BRAC Cleanup Team (BCT) was formed in FY94 and has helped improve communication and partnering among the installation, EPA, and the state.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was established in 1988. The TRC was converted to a Restoration Advisory Board (RAB) in FY94 and has 32 members from the community, local business, and regulatory agencies. The RAB meets monthly and is currently being reorganized. The RAB provides a forum for diverse opinions to be directed to the BCT and to resolve issues.



COMMUNITY RELATIONS PLAN - In 1989, a Community Relations Plan (CRP) was completed. It was updated in 1995. Other community relations activities include public meetings, open houses, workshops, and distribution of fact sheets and newsletters. The CRP is presently being updated again.



INFORMATION REPOSITORY - An Administrative Record was established and information repositories were set up in 1989. The Information Repositories, containing copies of the Administrative Record documents, are located at the following two local public libraries:

San Francisco Public Library
Anna E. Waden Branch
5075 Third Street

San Francisco Public Library
Main Library
corner of McAllister and Larkin

Both repositories were updated in 1993 and are now updated quarterly.

BASE REALIGNMENT AND CLOSURE



BRAC - In 1991, NSTI Hunters Point was included in the Base Realignment and Closure (BRAC) Program. A BRAC Cleanup Plan was completed in FY94 and updated in FY95. In addition, a Baseline Environmental Report was completed in July 1994. A revised approach to investigation and remediating sites was implemented at this time. Sites were divided into geographic areas, Parcels A-F, to facilitate investigation and remediation. The intent is to sell the land, parcel by parcel, as various parcels are remediated.

Parcel A: Sites 19, 41, 43, 45, 50 and AOCs 59 and 77.

Parcel B: Sites 6, 7, 10, 18, 20, 23-26, 31, 42, 45, 46, 50, and AOCs 60-62.

Parcel C: Sites 27-30, 45, 49, 50, 57, 58 and AOCs 63 and 64.

Parcel D: Sites 8, 9, 16, 17, 22, 32-39, 44, 45, 47, 48, 50, 53, 55 and AOCs 65-71.

Parcel E: Sites 1-5, 11-15, 21, 38-40, 45, 47, 48, 50-52, 54, 56 and AOCs 72-76.

Parcels D and E both include Sites 38, 39, 47 and 48.

All the parcels include Site 45 (Steam Lines) and Site 50 (Storm Drains/Sewers).



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was formed in January 1994. The BCT meets every two weeks. The BCT has helped improve communication and partnering among the installation, EPA, and the state. The BCT also has helped expedite cleanup. Small areas of contamination can now be excavated during the investigation process, eliminating the need to revisit the site. The BCT will use Records of Decision (RODs) to streamline the decision-making process. The BRAC Cleanup Plan was prepared in FY94 and is updated regularly.

TREASURE ISLAND NS HUNTERS POINT ANNEX



DOCUMENTS - A basewide Environmental Baseline Survey (EBS) was delayed because the many studies conducted at NSTI Hunters Point showed that there were no Community Environmental Response Facilitation Act (CERFA) clean parcels. In order to speed reuse and transfer, a basewide EBS is now underway with completion expected by May 1996. Site specific EBSs will be conducted in conjunction with a Finding of Suitability to Lease (FOSL) as properties are prepared for leasing. The following property classifications were developed from an evaluation of historical documentation (baseline environmental reports) written during RI/FS activities.



LEASE/TRANSFER - The final property transfer date has not been determined. Site specific EBSs will be conducted in conjunction with the FOSL/FOST processes as properties are prepared for leasing or transfer.



REUSE - The Reuse Plan was completed in March 1995. A preferred alternative has been approved by the Mayor's Hunters Point Shipyard Citizens' Advisory Committee. The next step is approval by the City's Board of Supervisors. General reuse expectations are for education, arts, industrial, and maritime use.



FAST TRACK INITIATIVES - Hunters Point Annex has been divided into six parcels. This has allowed the accelerated remediation of one parcel. Parcel A may be transferred in FY96. Other remediation techniques that have accelerated the cleanup include investigation by excavation, early removal actions, and shorter document review periods. Funding appropriations have, and will continue to fall short of the levels needed to maintain an accelerated response action program. The strategy so far has been to use available funds to maximize compliance with the enforceable Federal Facility Agreement (FFA) schedule.

Some sites at NSTI Hunters Point overlap or lie within another site and are considered as one site. This is the case for Site 1 (Industrial Landfill), Site 2 (Bay Fill Area), Site 21 (Building 810), Site 41 (Bldgs. 816 and 818) and Site 59 (Abandon 55-Gallon Drums). They will be considered separate sites for this discussion due to different Preliminary Assessment (PA) and Site Inspection (SI) dates. Underground Storage Tanks are currently being tracked by parcel.

HISTORICAL PROGRESS

FY84

Sites 1-12 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed and identified 12 potentially contaminated sites. Sites 2 and 10 were found not to pose a threat to human health or the environment and no further action was recommended. Site 12 (Bay Sediments), was found to have sediment contaminated with copper, lead, and zinc. No further action was recommended for Site 12 in the IAS based on the determination that the sediment was "best left undisturbed." Removal actions, with no further investigation, were recommended at Sites 4, 7 and 8. Sites 1-3, 5, 6, 9, 10 and 11 were recommended for further investigation.

FY87 - FY90

Sites 1, 4 and 8 - Contaminated soil removals were completed.
Site 11 - Soil removal was complete and the site was capped.
Sites 12-18 - Concurrent with the IAS, the San Francisco District Attorney's Office investigated allegations that a machine shop illegally disposed of hazardous waste at approximately 20 locations during its lease of portions of NSTI Hunters Point. A second PA was completed and Sites 12-18 were identified. The number 12 was re-used at this time and is not the same Site 12 identified in the 1984 IAS. Sites 12, 15 and 17 were recommended for a Remedial Investigation (RI). Sites 16 and 18 were recommended for an SI. The machine shop was indicted for illegal disposal of hazardous waste.
Sites 19-58 - A third PA was completed. Of the forty sites identified (Sites 19-58), Sites 19 and 23-58 went on to an SI and Sites 20, 21 and 22 went directly to an Remedial Investigation/Feasibility Study (RI/FS).
Site 8 - Soil contaminated with the chemical additive PCB was discovered during the repair of an underground utility line in the vicinity of Building 503. A removal action was completed to remove soil containing PCB. Soil was excavated and transported to an off-site disposal facility. The site was included in the RI.

FY91

Site 1 - Began investigation of potential impacts from radiation generated from radium dials disposed of in the landfill.
USTs 1-5 - Underground Storage Tanks (USTs) were removed and some were closed in place. Removal Action Plans and Tank Abandonment Plans

were completed for 23 tanks within all 5 sites. The tanks were removed or closed in place.

FY92

Site 2 - A removal action to remove soil contaminated with heavy metals was completed.
Site 6 - Removal action of immediately adjacent soil was completed.
Sites 16 and 18 - An SI was completed. Both sites were recommended for further action.
Sites 6 and 8-10 - Draft RI was completed and found PCBs, lead, zinc and Volatile Organic Compounds (VOCs) in soil and groundwater. A Public Health and Environmental Evaluation was completed. A draft FS was completed and Interim Remedial Actions (IRAs) were proposed for Sites 6, 9 and 10.
Sites 1-3, 6 and 10 - Site Soil Treatment Feasibility Study was completed. The study found that large quantities of contaminated soil will require remediation during the course of RI/FS activities. On-site soil remediation will not be effective for Sites 1 and 2 due to disseminated metals and other contamination dispersed throughout the ground mass.
USTs 1-5 - USTs are being tracked by parcel. Seven additional tanks were identified in Parcel C. Further investigation with no further excavation due to the close proximity of buildings or other structures to the tanks was recommended for 6 tanks. Additional excavation with no further investigation was recommended for one tank.

FY93

Ecological Sampling and Analysis Plan is completed. Field work began. First phase of a three-phased Ecological Risk Assessment (ERA) was completed. The ERA was necessary to determine any potential adverse effects on the biota in the area. The first phase involved the review of existing documentation, performing bioassays and field surveys, and identifying biota.
Site 2 - Removal of PCB-contaminated sludge and a 150,000 gallon tank was completed.
Site 6 - Removal of nine 12,000 gallon tanks and their foundations, one 210,000 gallon tank, and underground piping was completed. In addition, a clay and gravel cap was placed over the site and rainwater runoff was collected and drained to the existing storm drain.

TREASURE ISLAND NS HUNTERS POINT ANNEX PROGRESS DURING FISCAL YEAR 1995

FY95

The Reuse Plan was finalized in March 1995.

A basewide Environmental Baseline Survey was underway. Site specific EBSs will be conducted in conjunction with a Finding of Suitability to Lease (FOSL) as properties are prepared for leasing.

Federal Facility Agreement (FFA) schedules were renegotiated in June 1995 and now include schedules for Parcels A and F. Parcel F is the off-shore portion of NSTI Hunters Point.

Completed draft RI/FS at Parcel A.

Site 9 - Removal of equipment, sunken baths, above ground structures, foundations, and soil contaminated with zinc and chromate began at the Pickling and Plate Yard. The project team included local residents who were specifically hired and trained to perform this work.

Site 3 - An Engineering Evaluation/Cost Analysis (EE/CA) is underway. A treatability study for chemical/thermal bioremediation in-situ is also underway. The treatability study is part of the removal action and may be used for the final remedy.

Sites 1, 2, 6, 50, 57 and basewide - Removal action activities continued.

Sites 19, 41 and 43 - These sites were determined to be RC.

UST 1 - This site was determined to be RC.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

A basewide EBS is expected to be complete in May 1996.

The Community Relations Plan is being revised and will be completed in FY96.

Parcel A - A draft and final No Action Record of Decision (ROD) will be completed in FY96. Parcel A will be transferred in FY96.

Parcel B - A draft RI/FS will be completed.

Parcel D - A draft RI/FS will be completed..

Parcels B, C, D and E - Removal actions planned include groundwater plume, storm drains, and exploratory excavation. Remedies considered include groundwater pump and treat, iron curtain, and excavation and disposal.

FY97

Parcel B - A draft and final ROD will be completed.

Parcel C - A draft RI/FS and a draft ROD will be completed in FY97, with final ROD in FY98.

Parcel D - A draft and final ROD will be completed..

Parcel E - A draft and final RI/FS will be completed in FY97 and a draft and final ROD in FY98.

PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	57							
SI	45	3	1					
RI/FS		3		31	23			
RD					12	42		
RA							3	51
IRA	5(9)		1(1)	9(10)	5(5)	2(2)		1(1)
RC	1	3					3	51
Cumulative Response Complete	2%	7%					12%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	5							
INV		1						
CAP		1		3	1			
DES					2	2		
IMP						1	1	2
IRA								
RC		1				1	1	2
Cumulative Response Complete		20%				40%	60%	100%

TUSTIN MARINE CORPS AIR STATION

TUSTIN, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 1,383 Acres

Funding to Date: \$47,772,000

Estimated Funding to Complete: \$101,871,000

Base Mission: Provided services and materials to support the operations of the Third Marine Aircraft Wing; provided operations training and weather support; operated helicopter outlying fields and air traffic control facility

Contaminants: Benzene, dichloroethane, ethylbenzene, naphthalene, pentachlorophenol, POLs, toluene, xylene trichloroethylene

Number of Sites:

CERCLA: 13
RCRA Corrective Action: 17
RCRA UST: 7
Total Sites: 37

Relative Risk Ranking of Sites:

High: 7
Medium: 10
Low: 19
Not Evaluated: 1
Response Complete: 0
Total Sites: 37

BRAC II



EXECUTIVE SUMMARY

Tustin Marine Corps Air Station (MCAS) is located in southern California near the center of Orange County. The installation is approximately 40 miles south of downtown Los Angeles and approximately 100 miles north of the California/Mexico border. Operations such as aircraft maintenance and servicing, firefighting training and storage of petroleum products have been the biggest contributors to sources of contamination. Contaminants consist of volatile organic compounds and petroleum products primarily affecting groundwater and soil. Current operations include pollution prevention technologies to prevent further contamination.

The installation occupies approximately 1,595 acres of land, of which approximately 30 percent is currently used for agriculture. Within the last 20 years, the area surrounding Tustin MCAS has transformed from primarily agricultural land to a residential and light manufacturing neighborhood. Both surface water and groundwater are of concern in the Tustin MCAS area. Five miles downstream from the station, the Upper Newport Bay Ecological Reserve encompasses 752 acres of coastal wetlands set aside for wildlife. In addition, a 300 acre duck pond is located between Tustin MCAS and the Upper Newport Bay. Groundwater quality is of concern as Tustin MCAS and various nearby communities obtain their potable and agricultural water supplies from wells in the middle aquifer.

A Restoration Advisory Board (RAB) was formed in FY94 and has 30 members which meet on a monthly basis. The Community Relations Plan (CRP) was revised in June 1993. An information repository has been established at the University of Irvine at California (UC Irvine) and four fact sheets have been issued.

Currently, 37 sites are in the study phase. All 13 CERCLA sites are in the Extended Site Inspection (ESI) or Remedial Investigation/Feasibility Study (RI/FS) phases. An RI/FS was completed at one of the 13 sites (Site 16) in FY95. All 17 RCRA sites are in Phase III of the RCRA Facility

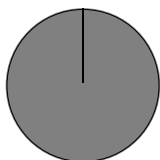
Assessment (RFA), a RCRA sampling visit. Site Inspections (SIs) were completed at seven Underground Storage Tank (UST) sites in FY95.

In the future, Phase III of the RFA is expected to be completed in FY96. ESIs will be completed at five CERCLA sites in FY96. RI/FSs will be completed at four CERCLA sites in FY96 and eight sites in FY97. Hot spot identification, removal and interim actions will be completed at several sites in FY96. An Interim Remedial Action (IRA) to install drainage controls at Moffett Trenches and Crash Crew Pits will be complete in FY97. Treatment of soils from the Fuel Farm and other various tank sites will be complete in FY97.

To accelerate cleanup, a thermal desorption process was selected for on-site treatment of contaminated soils. An on-site remediation project using the process was initiated in July 1995 at the Fuel Farm to accelerate the cleanup schedule for the Fuel Farm to meet the reuse priority. The process will also be used on petroleum contaminated soils at similar site areas identified during ongoing site characterization.

Tustin MCAS was recommended for closure by the BRAC II commission in 1991. Operations and activities at Tustin MCAS are expected to cease by June 1999. Due to the lack of definition of the Tustin groundwater characteristics, the California Environmental Protection Agency (Cal-EPA) and EPA did not concur with the Community Environmental Response Facilitation Act (CERFA) determination. This resulted in classifying the entire base property as Type 7. Without consideration of the groundwater, the bulk of the property is Type 1, with a few acres that can be classified under Types 5 and 6. Steps have been taken to expedite the groundwater characterization. The BRAC Cleanup Team (BCT) is taking steps to negotiate with the Local Redevelopment Authority (LRA) to determine the priority for the reuse parcels without compromising the mission requirements nor the cleanup activities. It is anticipated that Findings of Suitability to Transfer (FOSTs) will be prepared for eight parcels in FY96.

Current Status Of Sites



100%

■ Studies Underway	37
■ Cleanups Underway	0
□ Response Complete	0
TOTALS	37

TUSTIN MCAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - When the installation was first developed in 1942, the area was found to be fairly marshy. The area was backfilled and regraded and an extensive surface and subsurface drainage network was installed. The drainage network is still in use today, providing runoff control at the installation. Storm drainage ditches discharge to Peter's Canyon Channel on the east side which also receives runoff from Barranca Channel on the southwest side of the base. Peter's Canyon Channel merges with San Diego Creek which feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands. Wells within one mile of Tustin MCAS are primarily used for agricultural purposes, although the city has a drinking water well one and a half miles away and the Irvine Ranch Water District has two deep drinking water wells within one mile north of Tustin.

The installation lies in the Irvine groundwater basin, a subbasin of the Los Angeles groundwater basin. A shallow-deeper dual aquifer system has been identified beneath Tustin MCAS. The shallow groundwater flows generally in a southward direction in areas west of Peters Canyon Channel and to the west in the remainder of the base east of Peters Canyon Channel. The deeper or regional aquifer is believed to be 70-100 feet beneath Tustin MCAS. Groundwater levels in the deeper aquifer are generally lower than in the shallow aquifer due to extensive groundwater extraction from the deeper aquifer. The flow in the regional aquifer is to the west-southwest. Groundwater extraction beneath Tustin MCAS is currently from the regional aquifer through one well operated by the on-site farmer and is used for irrigation only. Shallow groundwater beneath the installation is currently not extracted for any beneficial use due to its high Total Dissolved Solids (TDS) content.



NATURAL RESOURCES - Two regional species listed as either federally threatened or potentially threatened are present in the vicinity of Tustin MCAS. The California gnatcatcher is a federally threatened species. In addition, the California least tern is an endangered species. The Upper Newport Bay Ecological Reserve, into which Peters Canyon Channel flows, was established in 1975 to preserve and enhance the saltwater marsh ecosystem. Eight species classified by California as either rare or endangered are dependent on the Upper Newport Bay. A series of marshy wildlife refuges are located immediately adjacent to San Diego Creek. Many plant and animal species settle in this wildlife refuge.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted on a site by site basis as part of the RI/FS. Seven sites were ranked as high relative risk in the DOD Relative Risk Ranking System. The high ranking was due to contaminated groundwater for six of the sites and contaminated soil for one of the sites.

REGULATORY ISSUES



LEGAL AGREEMENTS - There is a Federal Facility Site Remediation Agreement (FFSRA) currently under negotiation which is expected to be signed in early 1996. A master schedule for future CERCLA-related work is being developed to complete site remediation as expeditiously as possible. After the FFSRA negotiations are complete, the master schedule will become the basis for the enforceable project milestones schedule included as Appendix A to the FFSRA.



PARTNERING - The BRAC Cleanup Team (BCT) has agreed to use "team building" tools, which include frequent technical discussions, weekly telephone calls and an open door policy on communication among the various entities. Project team members are partners with the BCT in the development of the cleanup plan. Additionally, Cal-EPA/Department of Toxic Substance Control (DTSC) and the EPA have an innovative approach to share resources, thus expediting the review process, subsequently reducing total cost.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in August 1993. A Restoration Advisory Board (RAB) was formed in FY94 and divided into ten subcommittees to address various Areas of Concern (AOC) or interest. There are approximately 30 members on the RAB, which meets on a monthly basis. All RAB meetings are open to the public. Technical presentations to assist members in understanding complex environmental issues are given as needed.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was originally prepared in November 1990 for Tustin MCAS. In June 1993, the CRP was revised to reflect the community's concerns following the announcement that Tustin MCAS would be closing. Four fact sheets have been issued.



INFORMATION REPOSITORY - An information repository was established at the Main Library of UC Irvine. This location contains documents related to the Installation Restoration Program (IRP) process including the Administrative Record, work plans, technical reports and community relations materials, including the CRP, fact sheets, news releases and RAB meeting materials.

BASE REALIGNMENT AND CLOSURE



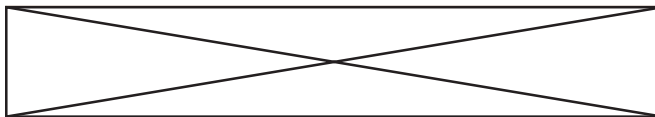
BRAC - Tustin MCAS was identified for closure in the Defense Base Closure and Realignment Act of 1990 (PL101-510) Base Realignment and Closure (BRAC II). Operations and activities performed at the installation are currently being discontinued or transferred to other Marine Corps installations. Operations and activities are expected to cease sometime between June 1997 and June 1999. Investigation and remediation of hazardous waste sites at Tustin MCAS will continue. The communities surrounding Tustin MCAS are already considering potential uses for the land that will be available when the military leaves. They want the environmental restoration process to proceed as quickly as possible so that they will not be hampered in developing the land to suit community needs.



BRAC CLEANUP TEAM - The Brack Cleanup Team (BCT) was formed in FY93 and is composed of members from Tustin MCAS, EPA, Cal-EPA/DTSC, El Toro MCAS, Naval Facilities Engineering Command (NAVFAC) Southwest Division (SWDIV), City of Tustin and Regional Water Quality Control Board Santa Ana. The BCT meets regularly to address issues regarding cleanup at the installation and to expedite the process.



DOCUMENTS - The BRAC Cleanup Plan (BCP) was last updated in September 1995. The Environmental Baseline Survey (EBS) was published in April 1994. Environmental Condition of Property (ECP) was completed and the findings are summarized in the following table.



Due to the lack of definition of the Tustin groundwater characteristics, the Cal-EPA and EPA did not concur with the CERFA determination. This resulted in classifying the entire base property as ECP Category 7. Steps have been taken to expedite the groundwater characterization. The BRAC Cleanup Team is taking steps to negotiate with the LRA to determine the priority for the reuse parcels without compromising the mission requirements nor the cleanup efforts.

TUSTIN MCAS



LEASE/TRANSFER - Since identification of uncontaminated or clean parcels has not yet been finalized, activities for Findings of Suitability to Transfer (FOST) or Findings of Suitability to Lease (FOSL) have not been initiated. It is anticipated that FOSTs will be prepared for eight parcels in FY96, with additional transfers planned for 1997, 1998 and 1999.



REUSE - A land reuse plan has been developed and is expected to be final in July 1996. Although still in draft form, the LRA treats the community reuse plan as final.



FAST TRACK INITIATIVES - Major steps taken to expedite cleanup include: Initiation of cleanup of Former Fuel Farm Area; implementation of a single phase RI at seven IRP sites; implementation of a base wide groundwater RI; using Expedited Site Characterization as developed by Argonne National Lab; Mobilization of an on-site Thermal Desorption Unit and identification of early removal actions at four IRP sites and 27 AOCs.

HISTORICAL PROGRESS

FY84

Site 1 - An Interim Remedial Action (IRA) was completed at Moffett Trenches and Crash Crew Pits in 1984 that involved sandbagging the Peters Canyon Channel to prevent contaminated groundwater from seeping into the channel, installing an extraction well and an oil/water separator and excavating and backfilling the crash crew burn pits with clean sand.

FY85

Sites 1-14 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA) was completed in September 1985 and identified 14 potentially contaminated sites at Tustin MCAS.

Site 1 - In May 1985, the Southern Area Regional Water Quality Control Board (SARWQCB) issued a Cleanup and Abatement Order to stop seepage and cleanup contaminated soil at Moffett Trenches and Crash Crew Pits. A Confirmation Study, Verification Phase Report (equivalent to an Site Inspection (SI)) was completed in July 1985 and was revised in September 1986. The study consisted of interpretation of new and existing data that indicated that groundwater and soil were contaminated with petroleum products and benzene, and the organic solvents trichlorethylene (TCE), and dichloroethane (DCA).

FY86

Site 1 - A removal action involving the excavation and disposal of contaminated soil at Moffett Trenches and Crash Crew Pits was completed in April 1986.

FY87

Site 16 - In May 1987, fuel was discovered in two holes excavated adjacent to two aboveground storage tanks at the Fuel Farm Area (Site 16). The tanks were removed and the soil was confirmed to be contaminated with petroleum hydrocarbons.

FY88

Site 1 - A IRA involving the installation of a gunite concrete slurry wall and the construction of a french drain was completed in July 1988 at Moffett Trenches and Crash Crew Pits.

Site 16 - A PA was completed in July 1988 for the Fuel Farm Area. The investigation found the following petroleum products: benzene, ethyl benzene, toluene and xylene in the groundwater.

FY91

RCRA Sites - An Addendum to the PA (the IAS), completed in February 1991, identified 14 additional potential sites (all 14 of these sites are being studied under RCRA).

Site 1 - An extended SI was completed in February 1991 for Moffett Trenches and Crash Crew Pits.

FY92

Site 16 - A removal action was completed in November 1991 for the Fuel Farm Area which consisted of removing 39 tanks.

RCRA Sites - Phase I of RCRA Facility Assessment (RFA) which consisted of a Preliminary Review was completed in March 1992.

FY93

Site 16 - An ESI was completed in September 1993 for the Fuel Farm Area.

RCRA Sites - Phase II of an RFA, which consisted of a visual SI, was completed in November 1992. Of the 246 Solid Waste Management Units (SWMUs) visited, 58 SWMUs were recommended for Phase III, a RCRA sampling visit. An aerial photography review was completed in December 1992, 11 Areas of Concern (AOCs) were identified and recommended for further investigation.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 8 and 9 - SI was completed for Drainage No. 2 (Site 8) and Hangar No. 1 Line Shacks (Site 9).

Site 16 - Remedial Investigation/Feasibility Study (RI/FS) was completed at the Rail Road Track Area (formerly the Fuel Farm Area).

Sites 1, 3, 5-9 and 11-13 - An RI/FS was initiated.

Sites 15, 17-26 and 35-40 (RCRA sites) - Phase III of the RFA, a RCRA sampling visit was initiated.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 6, 8, 9 and 11 - An RI/FS will be completed.

Site 2 - Excavation of contaminated soil will be completed at the Oil Disposal Area.

FY97

Sites 1, 3, 12 and 13 - Four IRAs are planned. At Site 1, an IRA to install drainage controls will be completed at Moffett Trenches and Crash Crew Area.

Sites 1, 2, 3, 5, 7, 12, 13 and 30 - An RI/FS will be completed.

Sites 27-34 - Corrective Action Plans (CAPs) will be completed.

TUSTIN MCAS PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	11	1						
SI	8	2						
RI/FS		1	4	8				
RD			1	1	6			
RA					7	6		
IRA	2(2)		2(2)	4(4)	3(3)	3(3)		
RC					7	6		
Cumulative Response Complete					54%	100%		
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA								
RFI								
CMS								
DES								
CMI								17
IRA								
RC								17
Cumulative Response Complete								100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV								
CAP								
DES								
IMP								7
IRA								
RC								7
Cumulative Response Complete								100%

TWENTYNINE PALMS MARINE CORPS AIR TO GROUND COMBAT CENTER TWENTYNINE PALMS, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CMC

Size: 595,367 Acres

Funding to Date: \$15,958,000

Estimated Funding to Complete: \$19,061,000

Base Mission: Provides support to Marine Corps Air Ground Task Forces and Marine Corps tenant activities; administers the Marine Corps Air Ground Combined Arms Training Program; provides training in communications and electronics

Contaminants: Heavy metals, POLs, volatile and semi-volatile organic compounds

Number of Sites:

CERCLA: 53

RCRA Corrective Action: 0

RCRA UST: 9

Total Sites: 62

Relative Risk Ranking of Sites:

High: 1 **Not Evaluated:** 29

Medium: 3 **Response Complete:** 1

Low: 28 **Total Sites:** 62



EXECUTIVE SUMMARY

Marine Corps Air to Ground Combat Center (MCAGCC) Twentynine Palms is located five miles north of Twentynine Palms, in San Bernardino County, California. The MCAGCC provides logistic and administrative support as well as training to Fleet Marine and Air to Ground Task Forces. Primary operations that contributed to contaminated sites at the facility were vehicle and aircraft maintenance and communications and electronics equipment maintenance. Current operations include pollution prevention technologies to prevent further contamination. Petroleum products have been disposed of at various sites around the center. This is of concern as contaminants can migrate to usable water supplies. A Cease and Desist Order was issued by the California Regional Water Quality Control Board (CRWQCB) for Site 18 (Crash Training Pit No. 4) in August 1987 and January 1990.

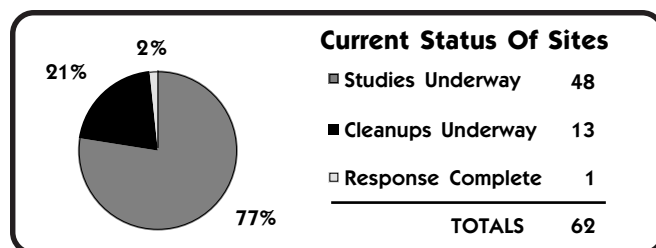
The lands surrounding MCAGCC Twentynine Palms are mostly agricultural and rural residential areas interspersed with some recreational reserves. Contaminants can migrate to usable groundwater supplies at MCAGCC Twentynine Palms through vertical subsurface percolation. Groundwater is the only source of water for public water supply systems at the station and the nearby city.

A Technical Review Committee (TRC) was formed and information repositories were established in two locations in November 1991. A Community Relations Plan (CRP) was completed in January 1994.

Currently 47 CERCLA sites are in the Site Inspection (SI) phase. Thirteen sites are in the cleanup phase: nine Underground Storage Tank (UST) sites and four CERCLA sites. Response at one CERCLA site is complete.

In the future, removal actions are planned at two sites in FY96 to remove contaminated soil. SIs for 47 sites will be completed in FY96. Corrective measures will be complete at one UST site in FY96. Removal actions will be completed at three sites by FY97.

MCAGCC Twentynine Palms was initially designated as a Base Realignment and Closure (BRAC) receiving facility. However, the Department of the Navy (DON) later decided to move the activities it was to receive to another facility. MCAGCC Twentynine Palms is one of five Navy installations participating in a Pilot Expedited Environmental Cleanup Program (PEECP). In implementation of this program, the station has been emphasizing removal actions to accomplish cleanups concurrently with investigations or a "remediate as you investigate" strategy. In the investigation of large volume fuel spills, the Marine Corps has been able to coordinate using borings installed for investigative purposes, which otherwise would have been backfilled, for installation of vent wells and soil gas monitoring points for pilot studies and full scale treatment. This has resulted in a savings in excess of \$1 million, and at least one year in the cleanup schedule. This approach is being utilized on tank and other fuel spill investigations also. A full scale bioremediation facility was completed for treatment of nonhazardous petroleum-contaminated soil generated as a result of cleanup activities at sites. Regulatory agencies have approved remediated soil for use as landfill cover or roadbed fill.



TWENTYNINE PALMS MCAGCC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Both surface water and groundwater contamination are of concern in the MCAGCC Twentynine Palms area. Surface water drainages in the area, while normally dry, can become a pathway for surface migration of contaminants during the infrequent intense thunderstorms which occur several times a year. Subsurface percolation of these surface waters and direct precipitation, containing potential contaminants, can migrate into the water table (which is more than 200 feet below the surface in most areas, but as shallow as five feet beneath dry lake beds). Contaminants reaching the water table can flow horizontally downgradient (south) to various wells using the aquifer as a domestic water-supply source (0-5 miles south of MCAGCC Twentynine Palms). Groundwater is the only source of water for public water supply systems at the station and the nearby city. Therefore, groundwater contamination would be a potential threat to human health.



NATURAL RESOURCES - The native flora and fauna of the station are typical of a North American desert community. The predominant plant species are the creosote bush and desert annuals. Areas most affected by a negative impact on the plant communities at the Combat Center are the Surprise Springs and Wood Canyon areas. The vegetation has diminished somewhat due to soil compaction caused by vehicular movement. The primary types of wildlife are rodents, reptiles and birds. Larger mammals are only found on station occasionally due to the lack of water sites. Rare, endangered, or threatened species in this area include four species of animals. Indirect contact with contaminants through the food chain is a potential threat to these species.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted as part of the Site Inspections (SIs). One site was ranked as high relative risk in the Department of Defense (DOD) Relative Risk Ranking System. The high ranking was due to contaminated groundwater. Analytical data indicate off-site migration of contaminated groundwater. The groundwater is rated as available for beneficial use by the State Water Board. Groundwater is not currently used for human consumption but potential exists.

REGULATORY ISSUES



LEGAL AGREEMENTS - A RCRA Facility Assessment (RFA) was initiated in April 1991 and terminated in July 1992 when the facility decided not to apply for a RCRA Part B Permit.

The California Regional Water Quality Control Board (CRWQCB), Colorado River Basin Region, issued a Cease and Desist Order for Crash Training Pit No. 4 (Site 18) in August 1987 and January 1990. Bioventing was initiated at the site in December 1993 and is expected to be completed in FY00. No further action is expected at the site.



PARTNERING - To facilitate Environmental Program efforts at MCAGCC Twentynine Palms, a Memorandum of Understanding is being negotiated between the Marine Corps, Department of the Navy (DON), Cal-EPA Department of Toxic Substances Control (DTSC), and the CRWQCB. Quarterly meetings are held which are attended by parties to the agreement.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established yet for this base. Marine Corps base will establish a RAB if the public indicates an interest in establishing one. However, a Technical Review Committee (TRC) was formed in November 1991 and meets once a year.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in January 1994.



INFORMATION REPOSITORY - An Information Repository and an Administrative Record were established in November 1991. Information Repositories were established at two locations: the Twentynine Palms Public Library and the Base Library. Information from the Administrative Record is contained in the information repositories.

TWENTYNINE PALMS MCAGCC HISTORICAL PROGRESS

FY86

Sites 1-20 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in October 1985, identified 20 potentially contaminated sites at MCAGCC Twentynine Palms. Thirteen sites (Sites 1-6, 9, 12, 13 and 17-20) were found not to pose a threat to human health or the environment, and no further action was recommended. Site 7 was recommended for a removal action. Six sites (Sites 8, 10, 11 and 14-16) were recommended for further investigation. Based on EPA review comments of the IAS, four sites (Sites 1, 7, 18, and 19) were later added to the Site Investigation (SI).

Sites 21-54 - Thirty-four potentially contaminated sites at MCAGCC Twentynine Palms were identified after the IAS. Based on discussions with regulatory agencies and on the Department of the Navy's (DON's) internal review, all 34 sites were recommended for further investigation.

FY88

Sites 1-54 - A Confirmation Study (CS), Verification Step Report (equivalent to an SI), was completed in FY88 for Sites 1-22, 25-27, 29, 30, 33-36 and 39-54. The study recommended further investigation for all sites. Data collected in this study was suspect due to quality assurance/quality control (QA/QC) concerns.

FY91

USTs 1-9 - A Site Assessment Report Phase I, for 15 tank locations at MCAGCC Twentynine Palms was completed in September 1991. Nine of the fifteen locations (Underground Storage Tanks 1-9) were recommended for additional investigation and remediation before a request for closure. The nine UST locations were identified as having petroleum products contamination at the following locations: one tank at Building 1851 (UST 1); four tanks at Building 1630 (UST 2); four tanks at Building 1573 (UST 3); one tank at Building 1559 (UST 4); two tanks at Building 1440 (UST 5); four tanks at Building 1420 (UST 6); two tanks at Building 1400 (UST 7); six tanks at Building 1138 Gas Station (UST 8); and one tank at Building 1065 (UST 9).

FY92

Sites 31, 32, 37 and 38 - SI phases were completed.

FY94

Site 16 - An SI was completed.

USTs 1-9 - A Remedial Investigation for bioventing all nine UST sites was completed.

Sites 17 and 18 - Removal actions consisting of bioventing were initiated and will be completed in FY00.

UST 8 - Corrective measures was initiated and will be completed in FY00.

PROGRESS DURING FISCAL YEAR 1995

FY95

Sites 2 and 3 - Removal actions consisting of bioventing were ongoing.

Site 14 - Two Interim Remedial Actions (IRAs) were completed. These included controlling access to the site and adding drainage controls.

USTs 1-9 - Investigations were completed at all nine UST sites.

USTs 2, 3, 5, 6 and 8 - Corrective measures consisting of bioventing were initiated and will be completed in FY00.

USTs 7 and 9 - Corrective measures were initiated at UST 7 (bioventing) and UST 9 (bioheap) and will be completed in FY98.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 1-7, 9-15, 17-19, 21-25, 27-31, 33-36 and 39-54 - SIs will be completed.

Sites 4, 5, 19, 26, 27, 37 and 38 - Remedial Investigation/Feasibility Studies (RI/FSs) will be completed.

Sites 14, 19, 23 and 26 - Remedial Action (RA) documentation will be completed.

UST 4 - This site will be RC.

FY97

Site 21 - Removal actions to excavate petroleum products contaminated soil is planned to be completed.

UST 1 - Corrective measure (bioheap) will be completed.

Site 15 - An RD will be initiated.

MCAGCC Twentynine Palms was selected by the Department of the Navy as one of five installations to participate in a Pilot Expedited Environmental Cleanup Program (PEECP). The program was established by Senate Appropriations Bill 102-154 and was initiated in May 1992. The DON's plans for expediting cleanup projects include creative uses of the CERCLA process, such as an emphasis on removal actions to accomplish

cleanups concurrently with investigations; variations of the CERCLA process, such as the use of "Observational" and "Data Quality Objective" (DQO) approaches; expedited document reviews; and greater interaction with regulatory agencies. The program encourages the use of expedited contracts, innovative technologies, and innovative approaches to solving problems. Procedures and technologies successfully implemented as a result of this program will be applied to future investigations and remediations.

BASE REALIGNMENT AND CLOSURE

At one time, the DON had plans to move some activities from Marine Corps Air Station (MCAS) Tustin, which was being closed under the Base Realignment and Closure (BRAC) program, to MCAGCC Twentynine Palms. The SIs for Sites 3-5, 8, 10, 17-20, 22, 25, 26 and 27 at Twentynine Palms were funded with BRAC II funds as these sites needed to be investigated and remediated before MCAS Tustin activities could be incorporated. Since the SIs were funded, however, DON decided to move the MCAS Tustin activities to Naval Air Station (NAS) Miramar instead. Therefore, Defense Environmental Restoration Account (DERA) funds will be used for any future work at these sites.

TWENTYNINE PALMS MCAGCC PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	19							
SI	5	1	47					
RI/FS			7	2		2		29
RD		1	2	2		2	1	28
RA			4			2	5	37
IRA		1(2)	4(5)	1(1)		1(1)	4(4)	17(17)
RC	1		6			3	1	42
Cumulative Response Complete	2%		13%			19%	21%	100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC								
INV		9						
CAP								
DES	9							
IMP			1		1		5	2
IRA			1(1)					8(8)
RC			1					8
Cumulative Response Complete			11%					100%

WARNER SPRINGS SURVIVAL, EVASION, RESISTANCE AND ESCAPE CAMP

WARNER SPRINGS, CALIFORNIA

Engineering Field Division/Activity: SOUTHWESTDIV

Major Claimant: CINCPACFLT

Size: 60 Acres

Funding to Date: \$293,000

Estimated Funding to Complete: \$130,000

Base Mission: Provides training in survival, evasion, resistance and escape for Pacific fleet Naval Aviators (AIRPAC) and other personnel

Contaminants: Motor oil, lubricants, solvents, paint, ethylene glycol, hydraulic fluid, batteries, used rags and household rubbish (lead and acid)

Number of Sites:

CERCLA: 1

RCRA Corrective Action: 0

RCRA UST: 0

Total Sites: 1

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 0

Medium: 0 Response Complete: 0

Low: 1 Total Sites: 1



PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	1							
SI			1					
RI/FS						1		
RD							1	
RA								1
IRA								1(1)
RC								1
Cumulative Response Complete								100%